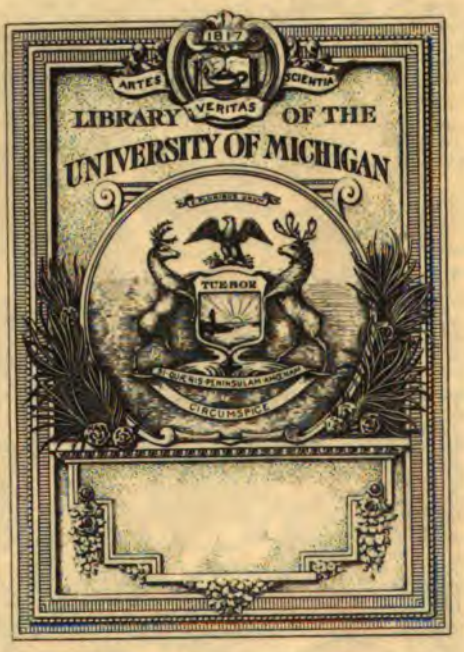

INDEX

OF THE

Mycological Writings

OF

C. G. LLOYD.

VOL. V.

1916-1919.

CINCINNATI, OHIO, U.S.A.

ARRANGEMENT.

(Binding is advised in this order.)

Index Vol. V.
Mycological Notes Nos. 42-60.
The Genus Radulum, May, 1917.
The Geoglossaceae, May, 1916.
Synopsis Genera Large Pyrenomycetes, January, 1917.
Large Pyrenomycetes (2nd Paper), July, 1919.
Xylaria Notes No. 1, September, 1918.
Xylaria Notes No. 2, December, 1918.
Myths of Mycology, December, 1917.
Letters Nos. 62-69.

Missing numbers to complete sets will be sent as long as the supply lasts, on request to the Lloyd Library, Cincinnati, Ohio. Missing numbers will only be sent, however, to the exchanges of the Lloyd Library, to those who supply specimens for study, or those who for some other reason we think are entitled to them.

ABBREVIATIONS

The following abbreviations are used in the Index:
M. N.—Mycological Notes (number and page).
Let.—Letters (number and note).
Geog.—Geoglossaceae (page).
Rad.—Genus Radulum (page).
Xyl.—Xylaria Notes (page).
Pyr.—Large Pyrenomycetes (page).
Myths—Myths of Mycology (page).
Syn.—After a species indicates that the name in my opinion is a synonym and without value. The species, however, is not necessarily a synonym in its proper genus.
Miss.—After a species indicates a mis-determination.

PERSONAL.

MISCELLANEOUS.

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POLYPORUS (STIPITATE).

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MISCELLANEOUS POLYPOROIDS.

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INDEX TO CONTRIBUTORS' NAMES.

The liberality with which my friends and correspondents have sent specimens for study has been the chief means of advancing my knowledge of the subject. It is only through an abundance of specimens from various localities that any subject can be learned. The numbers in the following list refer to the letters where detailed account of the specimens will be found.

INDEX TO CONTRIBUTORS' NAMES

MYCOLOGICAL NOTES

And Other Publications Issued by C. G. Lloyd.

The following publications comprise those that have been issued to date. We cannot supply sets of back numbers, but are often able to furnish a few missing numbers to complete sets.

C. G. LLOYD,
309 West Court Street,
Cincinnati, Ohio.

Vol. 1. Mycological Notes, Nos. 1-18, 1898-1904.
A compilation of the Volvae of the United States, 1898.
The Genera of Gastromycetes, 1902.
The Geastrae, 1902.
The Lycoperdaceae of Australia and New Zealand, 1905.
Notes on the Amanitas of the Southern Appalachians (by H. T. Beardslee), 1902.
Letters Nos. 1, 2, and 3, 1904.
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Mycological Notes, Nos. 19-31, 1905-1908.
The Tylostomeae, 1906.
The Nidulariaceae, 1906.
The Phalloids of Australasia, 1907.
Letters Nos. 4-24, 1905-1908.
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Mycological Notes, Nos. 32-37, 1909-1911.
Mycological Notes, Old Species, Series No. 1, 1908.
Mycological Notes, Polyporoid Issue, Nos. 1-3, 1908-1910.
Synopsis of the Known Phalloids, 1909.
Synopsis of the Genus Hexagona, 1910.
Synopsis of the Section Microporus, Tabacinus and Funales of the Genus Polystictus, 1910.
Synopsis of the Section Ovinus of Polyporus, 1911.
Synopsis of the Stipitate Polyporoids, 1912.
Letters Nos. 25-38, 1909-1911.

Vol. 4. Index, Vol. 4.
Mycological Notes, 38-41, 1912-1916.
Synopsis of the Genus Cladoderris, 1913.
Synopsis of the Stipitate Stereums, 1913.
Synopsis of the Genus Fomes, 1915.
Synopsis of the Cordyceps of Australasia, 1915.
Synopsis of the Section Apus of the Genus Polyporus, 1915.
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The Genus Radulum, May, 1917.
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Large Pyrenomycetes (2d Paper), July, 1919.
Xylaria Notes, No. 1, September, 1918.
Xylaria Notes, No. 2, December, 1918.
Myths of Mycology, December, 1917.
Letters Nos. 62-69.

MYCOLOGICAL NOTES.

BY C. G. LLOYD.

No. 42.

CINCINNATI, O. JUNE, 1916.

FRED. J. SEAVER.

FRED. J. SEAVER.

We present on the front page a photograph of a rising young American mycologist, who gives promise of doing good work in connection with the subject. Mr. Seaver was graduated from Miami University, and his attention was first drawn to the fungus subject by Dr. Fink. His first work in connection with the subject was a publication on the Discomycetes of Iowa, in 1904, in the Bulletin from the Laboratories of Natural History, Iowa. The Discomycetes is a section of American mycology that has only been well worked up in part by Prof. Durand. The greater part of it is still in a chaotic condition. Mr. Seaver's work on the Iowa species is really the only good, systematic account we have, and his work only embraced a few species. In this paper, Mr. Seaver is to be commended for using the established names. Shortly before his paper appeared, an article on the same subject relating to the Cincinnati species was published by Morgan. It was one of Morgan's last papers. It was, from beginning to end, simply a name juggle. Unfortunately, during the latter years of his life Morgan seemed to have become infatuated with this method of seeking notoriety. Therefore, much to Mr. Seaver's credit, he did not in a single instance, in his Iowa work, follow this line. Mr. Seaver is specializing on the Discomycetes and is engaged, we understand, in reviewing the subject for the North American Flora. We hope he will be conservative in his work for his own sake and for American mycology.

ADDITIONAL NOTES ON CORDYCEPS.

I am particularly interested in Cordyceps. They are most curious plants, usually developed from the bodies of some insect, larva, or pupa. I trust any one who finds specimens will favor me by simply drying and sending them to my address. The host should always be dried and sent with the Cordyceps attached. If the species is small and several are found, I should like a liberal collection. The tropical species are very imperfectly known.

CORDYCEPS SOBOLIFERA (FIG. 808). FROM S. KAWAMURA, JAPAN.—We reproduce a photograph and interesting notes of the species furnished by Mr. Kawamura. We received nine specimens, all immature but one. The immature specimen shows mostly

Fig. 808.
Cordyceps sobolifera.

a cluster of clubs near the apex of the stem. In the one fertile specimen all the clubs are abortive except one. This raises the question if it is the same species as Cordyceps sobolifera, originally from the West Indies. Tulasne's account and picture, which are all that is known about the West Indian species, represent a simple club. But it appears from his remarks that the fertile club is borne in the same way as shown in Mr. Kawamura's photograph. The perithecia are prominent, but slightly imbedded (Fig. 809, x 6). The secondary spores are 2 x 8 linear, exactly as shown in Tulasne's figure (T. 1, fig. 33). We think the Japanese and West Indian species are the same, but we wish we could get some specimens that grow on the Cicadidae in the West Indies. Mr. Kawamura's account is as follows:

Fig. 809.

"Three days ago I sent you several specimens of Cordyceps sobolifera. This fungus occurs in summer in house grounds under persimmon or some other trees on which Cicadas like to sing. The fungus is not rare, but rather common through this country, as Cicadas outbreak very abundantly in Japan. In summer everywhere we go we find the Cicadas on trees singing noisily, and boys like to catch the male ones (they do not like the female one, for it does not sing at all) with long bamboo rods applied with bird's lime. I have

30 or more specimens of this fungus collected at several places. The photograph enclosed here is of dry specimens or specimens preserved in alcohol.

"Cordyceps nutans is the special product of Fukuoka prefecture in Japan."

See additional account of Cordyceps sobolifera on page 585.

CORDYCEPS CAPITATA IN JAPAN.—In our last issue we did not include this as a species recorded from Japan. We note a drawing of the plant (Figs. 11, 12, Plate 13) in Illustrations of Japanese Fungi, published by the Bureau of Forestry, and received since our article was written. The figure is evidently correctly named, though not as good as most of the figures of this excellent series. The color is too dark, the fresh plant is much more yellow, also the tuber (host) at base of the plant appears as though it were a part of the Cordyceps. They are quite distinct from each other, and do not merge as those in the figure.

RARE SPECIES OF FUNGI RECEIVED FROM CORRESPONDENTS.

SEBACINA AMESII (Fig. 810).—Pileus fleshy, pithy, tubercular or compressed globose, 3-5 cm. in diameter, about one cm. thick. Context white, 5-10 mm. thick, light and pithy, composed of loosely woven hyphae. Surface appressed tomentose with soft, agglutinate hairs, (Fig. 811 enlarged). Hymenium inferior, a thin, fleshy layer contrasting in texture with the pithy context (Fig. 812 enlarged), warm buff color, 40 to 100 mic. thick, with the numerous basidia imbedded at various depths. Basidia (Fig. 813) globose, 12-16 mic., pale with granular contents, and finally septate. Spores pyriform, 8 x 12 mic. hyaline, opaque, smooth with a lateral apiculus.

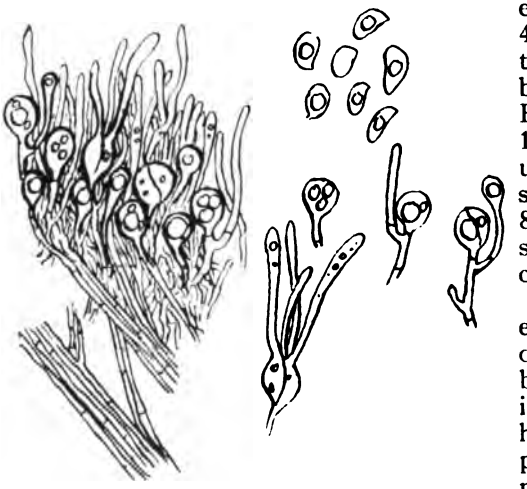


Fig. 813.

This characteristic and evidently very rare species departs from the genus Sebacina, as now considered, in not being resupinate, but having a thick, subglobose pileus. On this account it might well be made a new genus, but it is evidently so close to Sebacina in structure and so similar to the common species, Sebacina incrustans, in appearance, and particularly the hymenium, that I feel it is better to so class it and enlarge the limits of the genus.*

* My friend Professor McGinty does not take that view. He says if a "new genus" is not made now, it will be as soon as some parvenu learns that it has cruciate basidia, and is not resupinate, and he cites the history of the discovery of the genus Tremellodendron as a precedent. He proposes the name Atkinsonia for the genus to commemorate the discovery of Tremellodendron and the manner in which it was discovered. It will then become Atkinsonia Amesii, McGinty.

Sebacina Amesii is evidently a very rare species. We received it from Frank H. Ames, Brooklyn, N. Y. It does not occur in Prof. Burt's recent comprehensive account of the species with "longi-

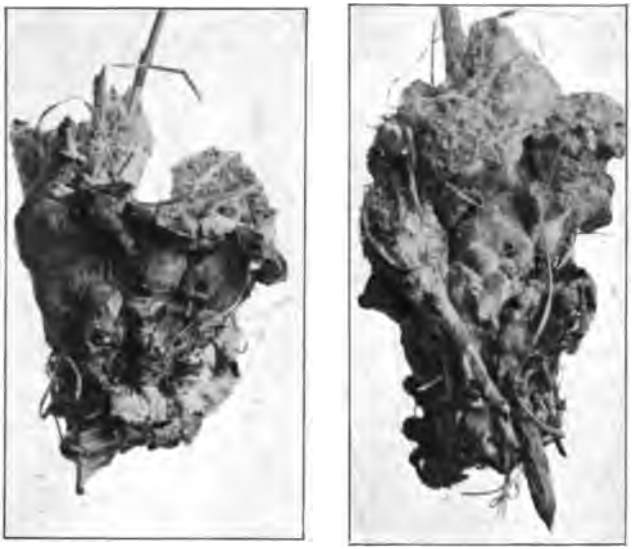


Fig. 810.
Sebacina Amesii.

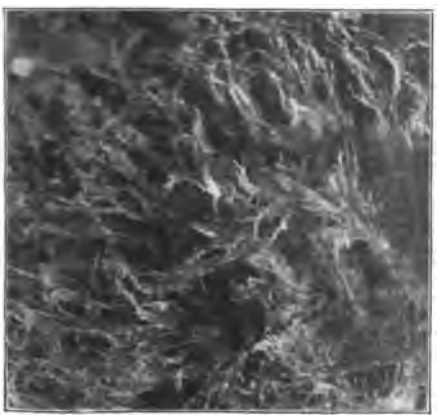


Fig. 811.
Hairs on surface (X 6).

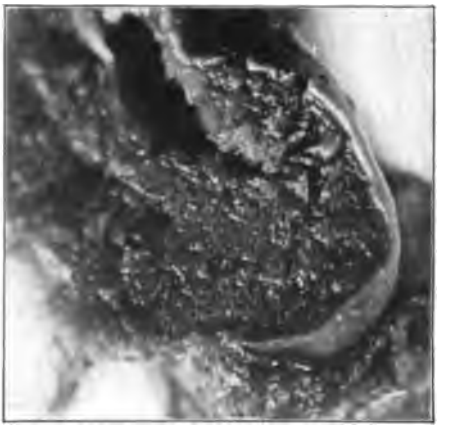


Fig. 812.
(Section X 6).

tudinally septate basidia" nor have I ever received it from any correspondent excepting Mr. Ames. Both Miss Wakefield, at Kew, and Rev. Bourdot, to whom I sent specimens, concur in the opinion that it should be classed as a Sebacina. Rev. Bourdot kindly prepared the figure (813) of the basidial structure.

In a recent letter, Mr. F. H. Ames gives an additional account of it. He states: "It grew in the grass on moss and presented a light, frothy appearance. The most of it was in an old road or path that had not been traveled for a long time and in rather thin, but moist woods. The weather was quite wet, or had been just previously. The color when fresh was white with a yellowish color in the hymenium. In drying it turned darker and took on a brownish hue. When fresh it had a very perceptible odor of slippery elm."

CYTTARIA GUNNII (FIG. 814), FROM R. G. ROBINSON, NEW ZEALAND.—The genus Cyttaria occurs only in the Southern Hemisphere. Originally it came from Terra del Fuego and Darwin gave an extended notice of it. It occurs abundantly and is used as

Fig. 814.
Cyttaria Gunnii.

food by the natives of that country, but I think those poor devils would eat most anything. It always grows on the branches of the native beech. Six species are named, five of them from South America. Cyttaria Gunnii is the only species in Australasia, and there I believe only in Tasmania and New Zealand. It grows on Nothofagus Menziesii. The South American species are solid and described mostly as deep yellow or orange. Cyttaria Gunnii is hollow and the dried specimen is white; slightly yellow when moistened. The spores are incorrectly given and figured in Cooke's account as ellipsoid. They are perfectly globose, measure 10-12 mic. smooth, hyaline, and are filled with granular matter. The base of the plant is smooth, and sterile, usually small, but in some specimens (as one photographed) the smooth portion is over one third the fruit. The honeycombed portion is the fertile portion, bearing the spores in asci lining the pores. The asci are soon absorbed and not found in the old specimens. This is the fourth collection I have of Cyttaria Gunnii, all from New Zealand.

Fig. 815.
Hypoxylon cerebrinum.

HYPOXYLON CEREBRINUM (FIG. 815), FROM J. B. HART, TRINIDAD.—We received this fine specimen from Mr. Hart many years ago, but at that time we had not worked at all on the large Pyrenomycetes. We sent it to Ellis, who advised us that it was a new species, and proposed the name Hypoxylon herculeum, but he never published it. It would have been a good name. The plant was named by Fée from Brazil many years ago, and it seems to me there must have been some transposition of the type, or the description in Saccardo. I have not seen the original publication. It is difficult to understand how he could have described it as "Stipes connate at the base," "Clubs with the apices dilated." The description as compiled in Saccardo must apply to Xylaria. However, his type is at Paris, broken in pieces, and it is undoubtedly this plant. There are also fragments at Kew (Fig. 816). As the name is quite applicable to it, and is definitely fixed by the type in the museum at Paris and Kew, there is nothing to do but continue it. Massee got a specimen from Trinidad, which he named Daldinia aspera. It never was a Daldinia, and as the original pieces of Fée's plant are at Kew, it should not have been renamed there.

Fig. 816.

The generic position is a question. The context is carbonous, not with concentric zones, hence not a Daldinia. The perithecia are peripherical, the spores elliptical, deep color (10 x 28-32), and in its structural features it is simply a giant Hypoxylon as classed by Cooke. It is stretching things to call a plant as large as this an Hypoxylon, but it is the best classification in my mind. I noted but two specimens in the museums of Europe, viz., the original that Fée named Sphaeria cerebrina, and the one from Trinidad, that was named Daldinia aspera. Mr. Hart's specimen sent me seems to be the third of what is evidently a very conspicuous but probably rare species.

POLYSTICTUS BIFORMIS (FIG. 817), FROM P. VAN DE BIJL, SOUTH AFRICA. A SMOOTH FORM.—This is a very common species in the United States, but our plant has usually appressed fibrils on the surface. As to pores, texture, color, spores, etc., it is

Fig. 817.
Polystictus biformis (smooth form).

exactly the same. With us it is a quite variable plant as to pores; often they are irpicoid, and I frequently receive it as an Irpex. Spores are 4 x 8-10 cylindrical, curved. Cystidia none. In Europe it is a very rare plant, and its connection with the American plant is not generally known, for when found it has been recorded under such

names as Trametes populina, Polyporus vulpinus (in error) and Daedalea Schulzeri. From Cuba it was called Polyporus pallidocervinus, changed to pallidofulvellus, a useless change, as the Cuban plant is the same as our common American plant. In Africa it appears rare, but this is the second collection I have, both smooth surface. I do not know that this smooth form has a name, nor do I feel that it should have a distinctive name.

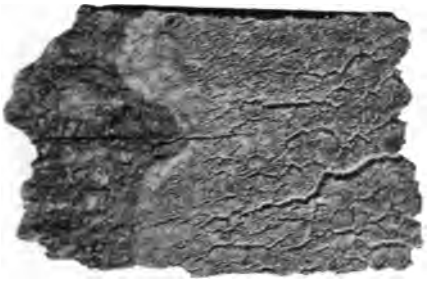


Fig. 818.
Gramnothele mappa.

Fig. 819.
Same enlarged.

Fig. 820.
Gramnothele lineata.

Fig. 821.
Gramnothele cineracea.

GRAMNOTHELE MAPPA, FROM P. VAN DE BIJL, SOUTH AFRICA.—This is an ambiguous, tropical genus, lying between Hydnaceae and Polyporaceae. It is classed in the former in Saccardo, but the hymenium is sometimes decidedly polyporoid, as in a species recently named from the Philippines (G. cineracea). The surface is covered with minute granules, visible to the eye. The genus was originally from Cuba and embraced four species (all probably the same), the different hymenial aspects being due probably to different positions of growth. I am not sure that the South African plant is the same as the Cuban. It should be compared under the microscope. But to the eye it is the same. On sec-

tioning the South African plant, clavate, hyaline bodies are seen, which I presume are basidia, also there are bodies of about the same size and shape, filled with colored contents, which I presume are gloeocystidia, but nothing that resembles the "emergences" figured by Patouillard, hence there is a doubt if the South African is the same as the Cuban species.

We present figures of authentic Gramnothele mappa (Fig. 818), and Gramnothele lineata (Fig. 820) from Cuba, also an enlarged figure of the hymenium of Gramnothele mappa (Fig. 819). We also present figure of Gramnothele cineracea (Fig. 821) (recently named from the Philippines), which is simply a granular Poria. The latter species, which is quite distinct from the Cuban plant, is peculiar in the way in which it affects the wood, as shown in our figure, the most notable character the plant has, but not mentioned in the original description.

LYCOPERDON ALBIDUM (FIG. 822), FROM JOHN A. STEVENSON, PORTO RICO.—I believe this is the first time I have gotten it, and the types at Kew are so poor I could tell but little from them, and they should never have been named. I am glad they were, however, for it gives us a name, and a quite suitable one, and from Mr. Stevenson's specimens we derive a clear idea of the characters of the plant.

Fig. 822.

Lycoperdon albidum grows gregariously on logs and has a strong, mycelial development, resembling very much unopened specimens of Geaster mirabilis. Peridium globose, white, about a cm. in diameter. Cortex furfuraceous. Gleba pale olive color. Sterile base none. Capillitium scanty, represented by a few hyaline hyphae. Spores very pale under the glass, globose or irregular, 4-5 mic. not apiculate, smooth. The surface of spores is uneven, but not tubercular. Lycoperdon albidum was named in mss. by Cooke from two imperfect specimens from Brazil. It was published in Massee's monograph, with a short description about as imperfect as the specimen. The two leading features of the plant are the abundant mycelial development and the almost entire absence of capillitium. I do not recall any other species with such scanty threads.

IRPEX VELLEREUS (FIG. 823), FROM P. VAN DE BIJL, SOUTH AFRICA.—This species is remarkable for the soft, spongy flesh, also characterized by dense encrusted metuloids on the hymenium. It was named from Ceylon, but I only have it from South Africa. The hymenium of this specimen is more polyporoid than irpicoid, and it would be better classed as Polystictus. However, it varies in this respect, and the previous specimens were not badly classed as Irpex.

Fig. 823.
Irpex vellereus.

SEBACINA DENDROIDEA.—I sent a specimen of this mysterious plant (cfr. Myc. Notes, p. 538) to Rev. Bourdot, and here present his interesting report. It will be noted that Rev. Bourdot suggests that it is not an autonomous species, but a "mycelial expansion" of the Fomes on which it is found. It is a new theory, and one that impresses me as having some basis.

"Votre Sebacina? ? dendroidea est bien curieux. Ce n'est pas un Sebacina sûrement! Je crois que c'est une *expansion mycéliale conidifère* du Ganoderma. Remarquez que les hyphes (Fig. 824) ont la même forme, la même ramification, et donnent les mêmes reactions, que les hyphes hyalines qui recouvrent la marge du Ganoderma applanatum, et tapissent l'intérieur des tubes. Le mode de formation das conidies sur ces filaments ne sont pas bien nets pour moi. Le point d'attache doit être trés fragile. Il y a de rares cas d'adhérence que j'ai cru observer. Il y a des points ou les extrémités de ces hyphes sont tellement serries et enchevêtreés, qu'on ne distingue plus rien; et c'est là précisément que les conidies du Ganoderma sont le plus abondantes.

Fig. 824.

Après Thelephora, Hymenochaete, Sebacina, c'est une nouvelle hypothèse: Ganoderma, que je vous soumets."—H. Bourdot.

A FUNGUS?—I received from H. L. Hammerstein, German East Africa, a curious thing (Fig. 825) that looks something like a dried phalloid, but I doubt if it is a fungus at all, although I can not suggest what it is. It forms a lattice work like a Clathrus, with granular surface. When soaked, the tissue is composed of these granules, loosely coherent, and easily crumbled under pressure. Mashed under the microscope, these granules are seen to be formed of thick, short, tubular hyphae, 12 mic. in diameter, with thick walls, and similar to the hyphae of a fungus. Adherent to the surface like the gleba of a phalloid, is a dark, amorphous substance that under the microscope is not resolved into any definite structure, and has nothing analogous to spores, basidia or asci. The thing is a mystery to me, and I publish a photograph hoping it may come to the notice of some one who is informed on the subject and can throw some light on it.

Fig. 825.

CORDYCEPS SOBOLIFERA (Fig. 826).—Since our article on the Japanese Cordyceps sobolifera (page 575) has been in type we were most agreeably gratified to receive from L. J. K. Brace, Bahamas, a fine specimen (Fig. 826) of this species from the West Indies, the original home. Cordyceps sobolifera was named (Clavaria sobolifera) and figured crudely by Watson in Philosophical Transactions in 1761. He called it "The Vegetable Fly," and to illustrate the crude ideas they had of the nature of Cordyceps in those early days we reproduce his remarks:—"The Vegetable Fly is found in the Island Dominica, and (excepting that it has no wings) resembles the drone, both in size and colour, more than any other English insect. In the month of May it buries itself in the earth and begins to vegetate. By the latter end of July the tree arrives at its full growth and resembles a coral branch, and is about three inches high, and bears several little pods which dropping off, become worms, and from thence flies, like the English caterpillar."

Fig. 826.

Cordyceps sobolifera is peculiar among the species of Cordyceps in its method of bearing fruit. Tulasne mentions it indefinitely, but his figure which was made from an imperfect specimen, does not show it. The fertile clubs are three, as shown in our figure, but usually only one, and generally deformed. The secondary spores are very narrow, about 1 x 8-12 mic. At the base of the fertile clubs bearing these ascus spores are a cluster of abortive processes. To the eye they are same texture and color as the fertile clubs, but the microscope shows that they bear only conidial spores. These are hyaline, narrowly elliptical, about 4 x 8 mic.

Recently Cordyceps sobolifera has been found in Japan (cfr. page 575) by S. Kawamura, and an abundant collection sent to me. The Japanese specimens were all, with one imperfect exception, immature, but in the photograph that Mr. Kawamura sends (Fig. 808) a perfect specimen is shown. The host, and microscopic details of the West Indian and Japanese plant are the same, and there can be no question of the identity of the species. The only difference I can note is that the West Indian is much darker color.

There were other references to the plant in old works of Natural History of West Indies all more than a hundred years ago. Since those old days Berkeley and Tulasne have both received specimens and given accounts and figures, Berkeley in 1845 and Tulasne in 1865. No specimens are now preserved in either of their herbariums, nor in any museums of Europe as far as I have found. The plant is usually abortive or deformed and there is much variation in the old crude cuts. There is no evidence that such a perfect specimen as Mr. Brace sends was ever before collected.

CLATHRUS CRISPUS (Fig. 827).—Two hundred years ago Plumier gave a crude figure of a phalloid which has been recognized as evidently the same as Clathrus crispus, which was finely, though it appears not accurately, figured by Turpin, Dictionaire des Sciences Naturelles, Atlas, plate 49, about 1820. This figure (cfr. Syn. Phalloids, (Fig. 76) is perfectly globose with large, isometric meshes. I have never seen any specimens corresponding to this figure. Father Schupp, from Brazil, sent me a photograph of a phalloid with same upper meshes, but the lower greatly elongated. This photograph was reproduced in Synopsis of Phalloids, Fig. 71, and called Clathrus Americanus. Mr. L. J. K. Brace has just sent me a dried specimen (Fig. 827) which has the meshes equal on one side and elongated on the other. There is no doubt it is the old, lost Clathrus crispus and it is also Clathrus Americanus. It also explains the Clathrus pseudo-crispus of the Phalloid pamphlet (Fig. 77). The truth in mycology is very elusive, but it finally filters out. Our best thanks are tendered to Mr. Brace for the specimen clearing up this subject.

Fig. 827.

HELP! HELP!! HELP!!!

A general alarm has been sent out by the New York Botanical Gardens for four species of Agarics that mysteriously escaped having Murrill's name affixed in a recent issue of their publication. It was the intention to add the name Murrill to all 311 species, but by some slip four got away. A liberal reward will be paid to any one who will capture one of these mavericks and bring it back into the fold.

Fig. 828.

LYSURUS MOKUSIN IN THE UNITED STATES.—We present (figure 828) a photograph of this species dried, which was found growing in a greenhouse at Chico, California, by Mr. David Griffiths, and forwarded to us through the kindness of L. C. C. Krieger, of California. An imperfect figure of the plant was given in our Phalloid Synopsis (page 37). In this specimen (Fig. 828) the volva has broken circumscissally and the top carried up covering the arms. The home of Lysurus Mokusin is China and Japan. It is one of the first foreign phalloids known and was figured in 1774 by Father Cibot, a missionary in China. It was no doubt introduced into the greenhouse at Chico with foreign plants. Our best thanks are extended to Mr. Griffiths and Mr. Krieger for the specimen and record.

PSEUDOCOLUS ROTHAE.—We have from Prof. Yasuda, Japan, a drawing (Fig. 829) and description of this species as follows:—"The fungus is 4-6 cm. high. Three arms are joined at the apex, of reddish orange and obtusely triangular, wrinkled, porous-celled, 2.5-4 cm. long. Stipe light yellow, 7 mm. thick, sometimes not extending beyond the volva. Volva whitish 2 x 1.8 cm. with a long root. Spores long—elliptical, smooth, hyaline, 2 x 5 mic."

This answers well to the original description of Bailey (cfr. Phal. Australia, p. 20) also crude figure at Kew (cfr. Syn. Phal. Fig. 69). It is surely same plant as Pseudocolus Javanicus (Myc. Notes, page 456, Fig. 272), also probably the original from Java by Penzig (cfr. Syn. Phal. Fig. 66), although the figure is misleading in its reticulate surface, if that is the case. Also I think without question, it is same as Pseudocolus rugulosus (Syn. Phal., page 52, Fig. 67) based on an old figure from Java. It is probably the only species of Pseudocolus in the East.

Fig. 829.

POLYPORACEAE OF THE MIDDLE-WESTERN UNITED STATES.

BY L. O. OVERHOLTS.

It is extremely gratifying to me to be able to give strong approval to a work issued on mycology. It is an excellent work. It is the first comprehensive and reasonably accurate account that has been given of the subject. Mr. Overholts has selected his names, in most instances, I think, with good judgment, and practically all are of established usage. There are a few of his names that are, according to my ideas, not meritorious, but compared with the great bulk of the work, they are not worth quibbling over.

Mr. Overholts has abandoned the genus Polystictus and refers all species to

the genus Polyporus. In a work covering a restricted territory and with a limited number of species, this is practically the best and easiest thing to do. There are no distinct lines between Polyporus and Polystictus, and to call them all Polyporus is an easy way of avoiding several embarrassing species. The only logical ground on which Polystictus can be maintained is that Polyporus has a large bulk, and that any plan cutting it up to a reasonable extent helps it along, and Polystictus is well established by custom.

Mr. Overholts has introduced a new method of citing authorities that is new to me, and while I think it may be criticised and is cumbersome, it is much preferable to the old method that has been used. Thus, we read Fomes scutellatus, Schw. ex. Cooke, Fomes ohiensis, Berk. ex. Murrill, Fomes pini, Thore ex. Lloyd, etc. While I consider it is an immaterial detail, it is at least honest, and far less confusing than the way some of our English friends would cite the same things, namely, Fomes scutellatus, Cooke, Fomes ohiensis, Murrill, Fomes pini, Lloyd. It also looks better than the old method of putting the author's names in parenthesis and then adding the name of the man who puts it in a genus. Thus, Fomes scutellatus, (Schw.), Cooke. This is the usual way of citing, and it is objectionable, for it looks on the face of it as though Schweinitz was a side issue and Cooke was the main part. The whole system is in the process of decay, and I am glad to see the "ex." in Mr. Overholts' work, because it is a preliminary step to the *exit* of Mr. Cooke and others who have gotten so much dead-head advertising in this way. According to my opinion, the name Fomes scutellatus is all that need be cited regarding the name of the plant.

Mr. Overholts' method of name citing is also, in many instances, misleading to anyone who does not know the facts in the matter. Thus, "Polyporus rheades, Persoon, ex Fries" may look well and be according to form, but the truth is, Fries knew nothing about Polyporus rheades of Persoon, did not recognize it when he saw it, but discovered it as a "new species." What practical good there is therefore in citing Mr. Fries' name to Polyporus rheades even as "ex," I am unable to understand. I have no doubt Mr. Overholts is thoroughly conscientious in his citations, and probably thinks he has added something to the subject, but there is so much in his publication that is gratifying that it is not worth while debating over immaterial matters.

Very few works on mycology have ever been issued with as few errors as there are in this work of Overholts' (excepting the errors of his advertisements, which would be of no value if they were correct), and very few have ever been issued that will prove so practical and useful.

The publication forms one of the Washington University studies, and I believe is not on sale. The only unfortunate fact about it is that it is not published in book form, for I believe a work of such merit should be in considerable demand.

DISCREPANCIES IN MR. OVERHOLTS' PAPER.

We give above a notice of Mr. Overholts' latest work on Polyporus. As we state, we believe it is not only the best, but the only practical and sensible work published, and devoted to the American species. Most of the work, the descriptions, the microscopic details, was original with Mr. Overholts and was most excellently and accurately done. In his conception of the species and the names he uses he is in the main in accord with me. Of the hundred and thirty-two species considered, he takes one hundred and seventeen in the same sense that I do and uses exactly the same names that I do. It is quite evident that he has been a close student of my publications, and has followed me in the main. Of course, that is quite gratifying to me, particularly as in his first paper, under the influence of Prof. Fink, who did not know the first elements of the subject, he, after getting the most of his information from me, and from my museum, repudiated as a whole my idea of employing the established nomenclature. We itemize below the few (fifteen) instances where Mr. Overholts does not accord with me in the names used for the plants. All of them were well known to Mr. Overholts and most of them are simply questions of choice between two synonyms which is preferable to use. Mr. Overholts has done perfectly right to choose the one that appeals to him, and I believe the only way that nomenclature will finally reach stability is for authors to use this discretion and omit their advertisements. In a few instances I may change and follow Mr. Overholts, as in the case of Polyporus humilis for Polyporus frac-

tipes, for it must be admitted it is a kind of nonsense to call a plant "fractipes" because the type specimen happened to have had its stipe broken. As Mr. Overholts does not in a single instance resort to that old, fraudulent argument, the chief stock in trade of all professional name jugglers, "the rights of priority," we are not disposed to quibble with him over minor differences of opinion. We itemize the few discrepancies for the benefit of those who are sending plants to us for identification, and who are fortunate enough to have Mr. Overholts' work for study and reference.

Polyporus Bartholomaei is velutinus.

Polyporus pennsylvanicus is pallidus as named by Peck and probably correct. It is much closer to squamulosus than to any other species.

Polyporus humilis is fractipes. Humilis is the best name, for fractipes was based on an accident.

Polyporus planellus is only a juggle for Polyporus planus. Romell claims it is stereoides of Europe. (Cfr. Note 358.)

Polyporus Lloydii is Polystictus Greyii.

Polyporus guttulatus is Polyporus alutaceus.

Polyporus fibrillosus is Polyporus aurantiacus.

Polyporus Tsugae is Polyporus lucidus. The original author (Murrill) thought it was not lucidus because he thought lucidus had pores in strata. That was only a bull. In the sense of Overholts it is the acerous wood form of lucidus, and I do not believe it can be distinguished without knowing the host.

Polyporus resinosus. I call this fuscus now for reasons stated many times in detail. Resinosus is much used, but is a very bad name for it.

Polyporus nidulans is Polyporus rutilans.

Fomes albogriseus is surely only young officinalis.

Fomes Ellisianus is for me same species as Fomes fraxinophilus on a different host.

"Fomes fulvus Scopoli ex Gillet" is a different plant from "Fomes fulvus Scopoli ex Fries," which is still a different plant from "Fomes fulvus Scopoli ex Marcucciana," which is still a different plant from "Fomes fulvus Scopoli ex Schaeffer," which is still a different plant, etc., etc., etc. I believe there are six different men who have passed on "Fomes fulvus Scopoli," each with a different plant, and I am forced to the conclusion that none of them really know much about what Scopoli did name. Why Mr. Gillet should be singled out as the wise one of the lot I do not know.

Fomes lobatus was based on a distortion. The author had no idea, however vague, concerning it as a species. Mr. Overholts takes it in the sense as pointed out by Morgan as a species, and Morgan was the first to formulate a specific idea in connection with it. I do not set myself up as a model of honesty, but I think there are few more dishonest things done than to take your ideas of a species from one man and your names from another who happened to stumble over a distortion.

Trametes rigida. I judge Overholts has the species right, but record of distribution is based on a different plant. I doubt if Trametes rigida occurs in either of the states mentioned.

Trametes Peckii. When Peck was groping around for names for the common things he found, he sent several specimens to Kalchbrenner, which are still preserved at Berlin. Kalchbrenner's determinations were only a joke. Thus he determined Fomes pini as Daedalea confragosa and others about the same way. He discovered that the common Trametes hispida was a "new species" which he called Trametes Peckii. Every one who has seen the specimen at Berlin, Bresadola, Murrill and myself, has referred it to Trametes hispida, but Mr. Overholts evidently considers we were all mistaken. I would not object to holding Trametes Peckii as the light colored form of Trametes hispida (corresponding to Daedalea ochracea as a color form of Daedalea unicolor), but it is a mistake to substitute it for Trametes hispida.

Lenzites vialis is Lenzites trabea in the sense of Orth and European mycology, whatever it may be in sense of Persoon.

Favolus rhipidium is called also Polyporus rhipidium and Gloeoporus rhipidium, and it is not very good as either. It is a poorer Favolus, however, than either of the other two. I observed it fresh in Florida last winter and concluded it would not be bad in the genus Gloeoporus if I thought that the genus Gloeoporus was worth maintaining. The entire plant when fresh is somewhat "waxy," but that is a different idea from Gloeoporus with fleshy context and gelatinous pores.

MYCOLOGICAL NOTES.

BY C. G. LLOYD.

No. 43.

CINCINNATI, O. SEPTEMBER, 1916.

GEORGE E. MORRIS.

GEORGE E. MORRIS.

On the first page of this pamphlet we present a photograph of the late George E. Morris, who on July 5th, died at his home at Waltham, Mass. For many years Mr. Morris was a leader in matters both botanical and mycological in the East, and probably no one had a better knowledge of the indigenous plants of his region in Massachusetts. He was a teacher of drawing and an artist of excellent abilities, as well as a botanist. These accomplishments enabled him during his lifetime to prepare colored drawings of the greater part of the flowering plants and agarics of his region. These drawings we have never seen, but are told that they are of excellent merit and very extensive as to number. We do not know what arrangements have been made for their preservation and use, but hope they will be preserved in connection with the mycological work at Harvard. It is quite likely that Dr. Farlow's splendid set of exsiccatae and drawings will be left to Harvard, and if Mr. Morris' drawings are also secured they will make a collection unequaled in any other institution.

Mr. Morris was 63 years of age at the time of his death. The photograph that we present was taken about fifteen years previous. He was one of my esteemed correspondents, and as fine a collector as ever placed specimens before me. I always looked forward to the receipt of a fine lot of rare specimens from him every year. On the date of his death, a full account of his life and works was given in the Daily Press and Tribune, of Waltham, Mass., which is preserved in the Lloyd Library.

CORRECTION.

FRED J. SEAVER.—In my article concerning Mr. Seaver in the last issue of Mycological Notes, I made an error which I take pleasure in correcting, as advised by Mr. Seaver.

"I graduated first from the Morning Side College, Iowa, later from the State University of Iowa, and began work in mycology under the direction of Professor Macbride. I never attended Miami University, and have never been a student of Dr. Fink's, although I have always been associated with him in an indirect way."

ADDITIONAL NOTES ON CORDYCEPS.

I am particularly interested in Cordyceps. They are most curious plants, usually developed from the bodies of some insect, larva, or pupa. I trust any one who finds specimens will favor me by simply drying and sending to my address. The host should always be dried and sent with the Cordyceps attached. If the species is small and several are found, I should like a liberal collection. The tropical species are very imperfectly known.

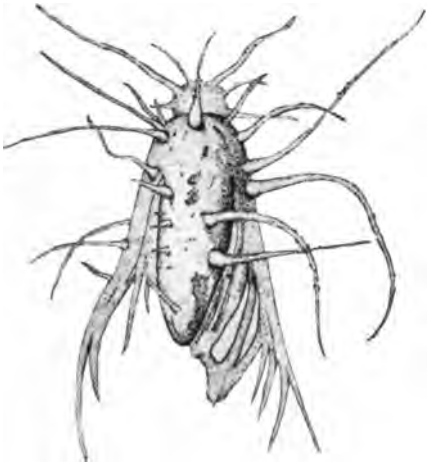


Fig. 830.

Fig. 831.

Cordyceps Sphingum. Fig. 830, from Tulasne. Fig. 831, clubs enlarged 6 times.

CORDYCEPS SPHINGUM (Figs. 830 and 831).—We have received for inspection, from Archibald H. Ritchie, Government Entomologist of Jamaica, a cotype specimen of what Ellis called, from the West Indies, Cordyceps Cockerellii (originally Ophionectria Cockerellii), and it proves to be typically the well-known Cordyceps Sphingum which was well illustrated by Tulasne. Schweinitz found a conidial growth on a sphinx moth which he named Isaria Sphingum. Tulasne found a Cordyceps on the same moth, on insects from West Indies, in the museum at Paris, and assuming that it was the perfect

form of Schweinitz' species, called it Torrubia Sphingum. Berkeley received specimens from Cuba of Tulasne's plant which he records as Cordyceps Sphingum, and had the nerve to write "B. & C." after it.

It seems not to be a rare species in the West Indies, and I only know it from southern United States. Ellis referred here a Cordyceps growing on a cocoon in New Jersey. I have not seen it, but as Ellis did not know Cordyceps Sphingum when he received it growing on the true host from the "type locality," he probably did not correctly determine it when he found something on a different host, and in a region from which no one else ever found the species. Cooke states that Cordyceps Sphingum has been found in Switzerland, but I do not know the source of this statement. We present a figure originally from Tulasne, showing the moth bearing the Cordyceps clubs. These are slender, quite numerous, and proceed from different portions of the body of the insect. The perithecia are superficial and scattered along the stroma. We also present a figure (831) of the separate clubs enlarged (x6). This photograph was made from the Cuban collection at Kew.

SYNONYMS.—As previously stated, Cordyceps Cockerellii (the cotype) is typically Cordyceps Sphingum. The type at New York has shorter clubs, merely a variation, on which was based the "species." Moeller gives a fine figure of Cordyceps Sphingum bearing the perithecia more collected near the middle of the stroma, under the name Cordyceps Moelleri, discovered by Hennings. There is a

Fig. 832.

strong suspicion in my mind that Cordyceps locustiphila, Cordyceps tarapotensis and Cordyceps Uleana, all Henning's discoveries from Brazil, although growing on the locust, are all variations of Cordyceps Sphingum.

When Massee wrote his article, he found in Berkeley's herbarium a specimen Fig. 832 (x6) of Cordyceps Sphingum with well developed contiguous perithecia, which Curtis had named (mss) Cordyceps isarioides. He proceeded to publish it with the usual bulls. The spores he describes as continuous, filiform. They are not continuous, but septate in the type, as all Cordyceps spores are, and as readily seen when stained with iodine. Then he described it as having "dense white mycelium that almost covers the host." The "mycelium" is the scales found on all "woolly" moths. A Cordyceps with the mycelium on the outside of the host would be quite a novelty, incompatible with the accepted idea of the way Cordyceps are developed.

CORDYCEPS CLAVULATA (Figs. 833 and 834).—Mr. Ritchie also submits specimens of the Black scale (Saissetia nigra) with imperfect clubs of a Cordyceps, no doubt undeveloped Cordyceps clavulata, the only species known to occur on a scale insect in America. The history of the species is as follows:

Schweinitz (1834) under the name Sphaeria clavulata described a plant growing on oak branches. No specimen exists in his herbarium, and although he took the dead host for the subiculum, the description can refer to nothing but this plant as no doubt correctly interpreted by Peck (1876). Peck found it growing on scale insects on Ash, and his specimens were distributed in de Thumen's exsicc. 1258, and Roumeguere, 4782. In the meantime Berkeley (1861) had found it in Britain on the Wych-elm growing on a "sclerotoid substance" which Cooke states is a female Coccus. Berkeley named

Fig. 833.

Fig. 834.

Cordyceps clavulata Fig. 833, the scale insect bearing the clubs. Fig. 834, same enlarged 6 diameters.

it Cordyceps pistillariaeformis and gave his usual scanty description, but a very good figure in Ann. & Mag., Plate 16 (1861). Cooke recognized Berkeley's specimen as the same as Peck's collection, but employed Berkeley's name. This is the only collection known from England. I did not find it at Kew, but Cooke states in his day it was preserved and labeled by Berkeley, Cordyceps pachybasis. In this country it has also been collected by Dearness in Canada, Seaver in North Dakota, but it is so small that it is rarely found. In Europe fine specimens have been recently collected in Austria on Lecanium and distributed (Wien, No. 1817). Our illustration (Fig. 833) is made from these collections. The best developed specimens we have noticed are in Peck's museum from which our enlargement (Fig. 834) was made. As our figures tell the whole story, there is no use describing it.

I believe there is but one other Cordyceps recorded on scale insects, viz., Cordyceps coccigena, which was beautifully illustrated

by Tulasne from a species of Coccus from New Guinea, 50 years ago. Nothing is known of it excepting Tulasne's account, and no material is in Tulasne's herbarium. The heads are globose, differing in shape from those of Cordyceps clavulata, but it may develop in time that they are variations of the same thing.

LYSURUS GARDNERI.

LYSURUS GARDNERI (Fig. 835).—We present herewith a sketch of Lysurus Gardneri, recently sent us by C. C. Brittlebank, Melbourne. In our Phalloid Synopsis, we presented nine species of Lysurus, and the evidence since is that four of them, viz., Lysurus Gardneri (Ceylon), Lysurus Australiensis (Australia), Lysurus borealis (United States) and Lysurus Clarazianus (Argentina) are all one and the same thing. We have believed it for a long time, and there was no longer any room for doubt on the appearance of "Notes on Australian Fungi No. 2," August, 1915, by Dr. Cleland and Edwin Cheel. We suspected it from the first, but Professor Petch maintained that Lysurus Gardneri had its arms joined by a membrane at the apices, which was not the case as far as known in the other species. Messrs. Cleland and Cheel have satisfactorily explained this. In Australia, while the arms are usually free, they are sometimes "united at the apex by a thin membrane which gives the specimen a somewhat clathrate appearance." The figure 836 which we reproduce from Messrs. Cleland and Cheel presents the top of a young specimen with two of the arms joined. Mr. Brittlebank's sketch (Fig. 835) shows the arms connivent, as they are at first. They afterwards spread out, as shown in the fine photograph by Hollis Webster, published in Mycological Notes, page 513.

Fig. 835.

Fig. 836.

There is a long story connected with the species. First it was sent Berkeley from Ceylon and named Lysurus Gardneri. It is rare

in Ceylon, but recently collected by Professor Petch. One collection reached Kew from Australia (Bailey, Brisbane River) which Cooke named Lysurus Australiensis, and gave in the Handbook a most inaccurate and exaggerated drawing of it. It seems to not be common in Australia, though there are twelve collections in the National Herbarium, Sydney. Fischer gives a very good figure of it from Argentina under the name Lysurus Clarazianus. The European and American history is all recent, for it is supposed to be introduced into both these countries. With us it was first collected at East Galway, New York, by Professor Burt in 1893. He published it as Anthurus borealis, under a misconception of the genus Anthurus. A few stations were added from time to time (cfr. Myc. Notes, pp. 183, 219 and 515), and of late years it is sometimes found in abundance. It seems to grow where sod has been turned and rotted. In Europe it has been collected once in Germany and twice in England (cfr. Syn. Phalloids, p. 40), no doubt adventitious. The native home of the species is probably the East (Ceylon and Australia). Cleland and Cheel consider that Mutinus pentagonus (Syn Phalloids, Fig. 28) is the same plant. I examined the specimens at Kew and I thought the arms were consolidated in one piece. If they separate, then I think it is Lysurus Mokusin of China, which differs from Lysurus Gardneri in having an angular, fluted stem. Petch in his latest work insisted that the Ceylonese plant and Australian are not the same.

RARE SPECIES OF FUNGI RECEIVED FROM CORRESPONDENTS.

PAXILLUS AUREUS, FROM J. B. CLELAND, AUSTRALIA (Fig. 837).—Resupinate, or rather pileate and dorsally adnate. Pileus with pale yellow context, and raised, pubescent margin. Gills strongly venose connection. Spores small, subhyaline, 1½-2 x 3-4.

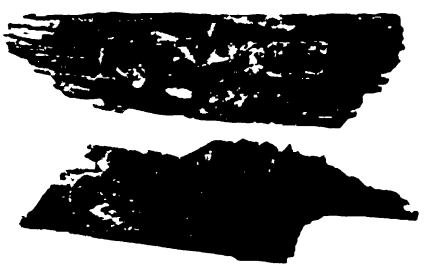


Fig. 837.

In its habits, appearance, color, context and spores this is so close to Merulius aureus, that there is a suspicion in my mind it is a hymenial variant of it, but no similar plant occurs in Europe. The gills are similar to those of Paxillus panuoides.

The old system of fungus classification on hymenial configuration is the best that can be devised, but it is not entirely natural. When we become familiar with them we often recognize very close relationships between plants of widely different genera.

PAULIA RESINACEA, FROM J. T. PAUL, AUSTRALIA (Figs. 838, 839 and 840).—Many curious fungi reach me, but nothing ever before as novel as this. I hardly know where to place it, though

I do not doubt it should be classed in the Gastromycetes. There is nothing similar in any respect.

Plant 4-5 cm. high, 2 cm. thick. Peridium brittle, resinous, bearing little grains of resinous substance like lac, apparently an exudation. Columella of pale tissue, reaching beyond the middle. Hymenial plates carbonous, black, closely packed, proceeding from the columella and terminating in brown apices, not reaching the

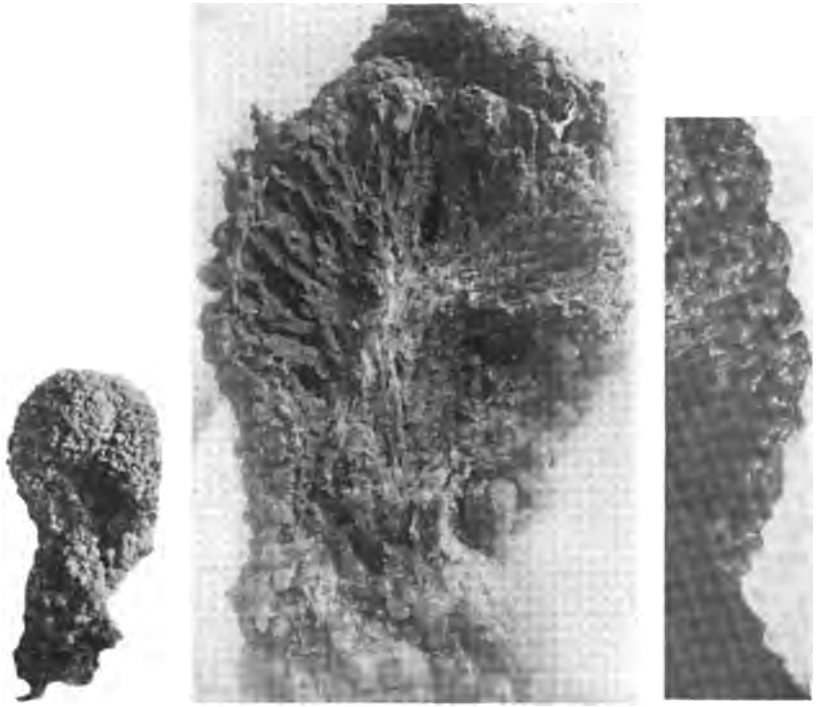


Fig. 838. Fig. 839. Fig. 840.

Paulia resinacea. Fig. 838, natural size. Fig. 839, section. Fig. 840, surface (enlarged).

peridium. Spores globose, 6 mic. pale brown color with minutely tubercular surface, are borne densely covering the carbonous plates.

It is difficult to suggest an analogy for this curious thing. There are no other genera of true Gastromycetes with carbonous plates. In the genera Gyrophragmium and Montagnites we have somewhat similar plates, but these genera do not have true peridia, and are in fact nearer to Agarics than to Gastromycetes. Nor do I know of any other fungus with such curious exudation. It looks like lac, but it is neither a true resin nor a gum, for it is soluble in neither boiling alcohol nor water. I have no information as to its habits, but hope Mr. Paul will advise me further in this respect.

THELEPHORA JAPONICA, FROM A. YASUDA, JAPAN (Fig. 841). — I think a good species, as named by Professor Yasuda. Close to Thelephora papillosa (Letter No. 54). Same hymenium and spores, the latter typically Thelephora spores. Differs in its dark, fibrillose surface, and apparently in its method of growth. These two species, both from Japan, are the only Thelephoras known to me with permanent, papillate hymenium.

Fig. 841.

A CONIDIAL XYLARIA (?) (Fig. 842). — Some years ago we received from Dr. Mary Whetstone, Minnesota, a curious and evidently rare fungus that we have never been able to satisfactorily explain. It consisted of pale, woody, clavate bodies proceeding from a hard sclerotoid base. We assume that it is the earlier or conidial stage of some Xylaria, but no Xylaria is known in this country or Europe that is developed from a sclerotium. In the East there is a species Xylaria nigripes, that is produced from a sclerotium and usually (always, perhaps) found on the ant hills. Prof. Petch has published very full accounts of it. We do not give it a name, for we do not believe in naming things when one does not know what they are, but it is very curious, and we hope will come again to the notice of some of our correspondents. The sclerotium is very hard and the specimen has the appearance of having been split off from a larger mass.

Fig. 842.

HYDNUM HENNINGSII, FROM MISS A. V. DUTHIE, SOUTH AFRICA.—This is the first well-developed specimen of this species that has been collected. The original was resupinate with deformed tubercules. This is dimidiate, four inches in diameter, yellow when fresh and evidently conspicuous when growing. The flesh of the dried plant is bright, but pale yellow. The teeth well formed, but brown, contrasting with the yellow flesh. Spores are 4 x 6, elliptical, smooth, colored. Hydnums with colored spores are rare. None occur in Europe or the United States. But four are known to me, one from South America, one from China, this one from South Africa, and an unnamed species from Cuba that I saw in the museum at Paris. I have previously received Hydnum Henningsii from I. B. Pole Evans, Pretoria, South Africa, which, however, was resupinate.

Fig. 843.

STEREUM ELEGANS, FROM MRS. A. V. KIRKWOOD, AUSTRALIA (Fig. 843).—We have received from Mrs. Kirkwood, Australia, a fine specimen of this species (Fig. 843), with a long tap root. The species is frequent in warm countries, particularly in Australia. We have about 20 collections, but no other has this long root feature. We do not know that it is a constant character. Some collections appear to have had the root broken off, but others do not appear to have had it.

Fig. 844.

IRPEX VELLEREUS, FROM P. VAN DER BIJL, AFRICA (Fig. 844).—Young condition with the hymenium in radiate ridges, hence a Radulum in this state. We gave in Mycological Notes No. 42, a photograph of the developed plant. Notwithstanding the very different appearance of the hymenium, the context, surface, and all other features are exactly the same, and we can not question that it is a younger development of the same plant.

EXIDIA JAPONICA, FROM PROFESSOR A. YASUDA, JAPAN (Figs. 845, 846 and 847).—Gyrose, applanate. Color dark, almost black. When moist (Fig. 845) 2-3 mm. thick. When dry (Fig. 846), a thin, ridged membrane less than a mm. thick. Tissue

Fig. 845.

Fig. 846.

Exidia Japonica

Fig. 847.

hyaline with a few dark hyphae interposed, which are dense, forming a thin, dark surface layer. Surface densely covered with fasciculate bundles of projecting hyphae (papillae) which when moist are dark, but when dry are white. Basidia 7-8 x 8-10, cruciate, imbedded in the dark surface layer. Spores not found.

There are several species of Exidia with similar structure, viz., the common Exidia glandulosa, Exidia truncata and Exidia spiculosa (in the sense of Tulasne). The latter is not for me the same as Exidia glandulosa, as usually referred.

Exidia Japonica is close to Exidia glandulosa. It is more firm, dries in a thicker layer, the tissue is hyaline (colored in Exidia glandulosa), and it is the only species known to me with white papillae when dry. The papillae of other species are concolorous and are hardly noticeable on dried specimens. The structure of Exidia spiculosa was first correctly shown by Tulasne (1873). Our enlargement (Fig. 847) will show the dense, white papillae on which the species rests.

POLYSTICTUS (OR TRAMETES) CUNEATUS, FROM J. M. GRANT, WASHINGTON (Fig. 848).—I took the types at New York, as Mr. Grant suggests, to be same as Polystictus Sequoiae, but these are better specimens and show them to be quite different. This species has same surface, texture and similar pores to Trametes hispida, and should be classed together, though Trametes hispida is a better Polystictus than Trametes. The context is pure white, and at first I considered the probability of it being a white form of Trametes hispida. But I found the spores globose, 5-6 mic. transparent with a large, opaque gutta, with no suggestion of the cylindrical spores of Trametes hispida. I therefore consider (now) Polystictus cuneatus to be a good species, though the name has no application whatever to these specimens.

Fig. 848.

GUEPINIA OCCIDENTALIS, FROM J. M. GRANT, WASHINGTON (Fig. 849).—Color light yellow, pale lemon yellow when soaked. Obconic with a short stipe. Disc flat, 3 mm. Stipe short, merging into the cup. Externally glabrous, but under the glass surface of hyaline, palisade, inflated cells. Basidia forked, with yellow, guttulate contents. Spores subcylindrical, arctuate, 5-6 x 20 mic., septate when old, with granular, pale yellow contents.

Fig. 849.

The genus Guepinia consists of stipitate, tremellaceous plants with forked basidia, and subcylindrical spores which are septate when old. It has the hymenium on one face only. We have in the eastern United States one common species, G. spathulata, one fairly common, G. elegans, one very rare, G. Peziza. From the West two species have been distributed, G. monticola and G. alpina. In addition, G. lutea is named from Alaska.

Guepinia occidentalis, alpina, lutea and Peziza are similar species, all yellow, and growing on pine. They differ mainly in the grosser features. The latter two are long stalked, the former two short stalked. G. occidentalis is quite close to G. alpina, with a disc one half as large and spores about double the size. I know alpina only

from description, and perhaps they are the same species. As all these yellow Guepinias on pine are rare plants, we are particularly glad to get this nice collection from Mr. Grant.

As to basidia and spores, Guepinia is same as Dacryomyces, and the reason this is not a Dacryomyces is that the hymenium covers one face only. Still the distinction in some species of Dacryomyces is not marked, and these obconic Guepinias are perhaps better called Dacryomyces. Our figure (849) is a specimen soaked out and enlarged six diameters.

POLYPORUS ROSETTUS, FROM MRS. A. V. KIRKWOOD, AUSTRALIA (Fig. 850).—Submerismatoid. Proceeding from a hard, woody base, it divides above into a number of short, irregular lobes.

Fig. 850.

Polyporus rosettus. (Showing top and section.)

Pores small, round, irregular, white. Context very hard, white. Surface fuliginous. Spores 3 x 5, hyaline, piriform.

The method of development is unlike any other species known to me. It is not a true Merismus, but we would place it for convenience in that section. The feature of the species is the hard, woody context similar to Polyporus Spraguei and Polyporus ostreiformis and Polyporus osseus in texture. We have gotten it before from W. W. Froggatt, Sydney (No. 7), and Dr. J. B. Cleland (No. 71).

IRPEX NOHARAE, FROM K. MIYABE, JAPAN (Fig. 851).—This species named from Japan, we have from Mr. Miyabe for

the first time. We have only seen the types heretofore. It is a th'n, membranaceous species with the incised teeth arranged lamelliform. In fact, it could be best designated as an irpicoid Lenzites. We do not know that Irpex takes this lenzitoid form excepting in Japan (Compare Irpex Tanakae, page 4, Letter 51).

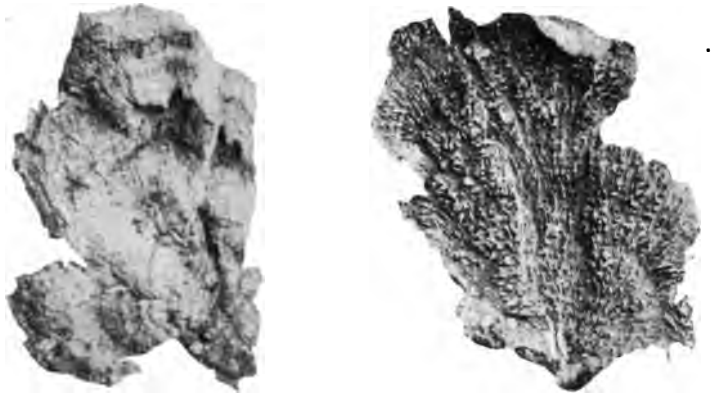


Fig. 851.
Irpex Noharae.

Fig. 852.
Irpex zonatus (from the type).

The original specimens of Irpex Noharae were semiresupinate, but this collection is all pileate. Irpex Noharae has such a close resemblance to Irpex zonatus, a misnamed plant from Ceylon (Fig. 852 photograph of the type) that there is a suspicion they are virtually the same species. However, Irpex zonatus does not have in its type form the peculiar teeth of the Japanese plant. Still they may be the same thing. While hymenial configuration is the basis of fungus classification, it is not always the test of a species. Polystictus pellucidus (Myc. Notes, p. 554) is another plant that is quite close in its leading features.

BOVISTELLA ECHINELLA, FROM J. F. BRENCKLE, N. DAKOTA (Fig. 853).—We have noted this unique little species

several times before (Cfr. Myc. Notes, pages 262, 286, 452) and the receipt of a collection from Dr. J. F. Brenckle, N. Dakota, leads to some additional remarks. The species is exceptional in several respects. It is the smallest and perhaps the rarest puff ball known. It is widely distributed and there are but nine collections known as follows: Ecuador, type, also Rev. F. Mille; Jamaica, W. Jekyll;

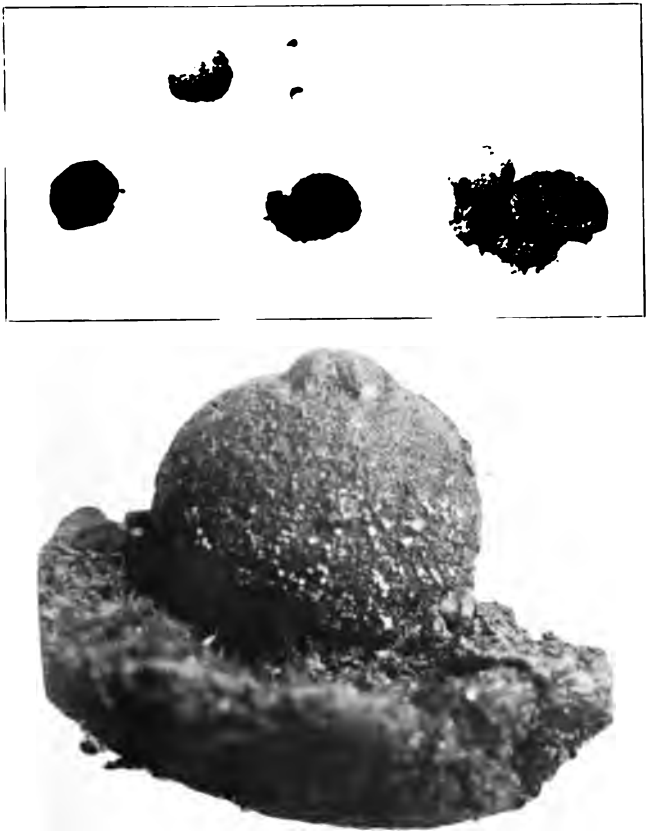


Fig. 853.
Bovistella echinella. The upper natural size. The lower enlarged six fold to show the mouth.

Mexico, J. N. Rose; Denmark, Rev. J. Breitung; Lapland, R. E. Fries; Michigan, B. O. Longyear; Washington, W. N. Suksdorf; North Dakota, Dr. J. F. Brenckle. All these nine collections are in our museum and but one (the type) in any other as far as I have ever noted.

The species is peculiar in another feature. It has a definite, protruding mouth (see lower figure 853), a character common in Geasters and Tylostomas but found on no other closely related plant such as Bovistella, Bovista, or Lycoperdon. This mouth has led to an important (to McGinty) historical discovery. Patouillard named it

Bovista echinella, but Batsch named it a hundred years before Patouillard saw it, Lycoperdon pusillum, and gave a characteristic figure of it, showing the protruding mouth which no other similar plant has. In the meantime an entirely different and very common plant has acquired the name Lycoperdon pusillum and hundreds of specimens have been so labeled, not forgetting to add "Batsch." I presume I have so named a hundred collections myself for correspondents. Prof. McGinty expresses his horror of such kind of work, and proposes to restore the name Bovistella pusilla (Batsch) McGinty according to the sacred principle of priority.

TRAMETES LACERATA, FROM JAMES R. WEIR, MONTANA (Fig. 854).—Resupinate white, without distinct margin,

Fig. 854.

closely adnate to the host. Pores white, large, 1-2 cm. irregular-rigid, with thin, lacerate pore walls. Spores 2½ x 5-6 narrow, ell p, tical, hyaline, smooth. This grows on Alder. It reminds one somewhat of resupinate Lenzites heteromorpha, but the pores are different.

DALDINIA VERNICOSA, FROM BERRY BENSON, SOUTH CAROLINA.—A fine collection, typically as named by Schweinitz, but I question if it is really distinct from the common Daldinia concentrica of the entire world. In the type idea D. vernicosa differs from D. concentrica in its turbinate form and more shining surface, while D. concentrica is more globose and of duller surface. The spores (6-8 x 10-14) and perithecia are the same. As pointed out by Ellis the latter are monostichous, not polystichous as stated in Saccardo.

There are 24 species of Daldinia given in Saccardo, mostly from the tropics. For the most part they are Daldinia concentrica, a common and widely distributed plant. We get it from almost every country in the world, and in Australia it takes large size, two or three inches in diameter. In Europe Daldinia durissima was proposed by Fries many years ago, but no one else ever found it, and a type at Kew is the only common D. concentrica. Léveillé discovered two species in the United States, D. cingulata and D. loculata, both the common D. concentrica. Massee discovered Daldinia aspera in the West Indies, which is not a Daldinia at all (cfr. Myc. Notes, p. 579).

MYCOLOGICAL NOTES.

BY C. G. LLOYD.

No. 44.

CINCINNATI, O. DECEMBER, 1916.

LEWIS DAVID VON SCHWEINITZ.

MYCOLOGICAL NOTES

Issued by C. G. LLOYD.

224 West Court Street, - - CINCINNATI, OHIO.

SUBSCRIPTION PRICE.—A little personal interest on the part of the recipient in picking up and sending to my address, specimens of the larger fungi. All are desired excepting specimens of fleshy Agarics. Simply dry the specimens and send them in.

LEWIS DAVID VON SCHWEINITZ.

The subject of our photograph, on the preceding page, is the pioneer mycologist of America. He it was who hewed the trail that has since been followed. Schweinitz was born at Bethlehem, Pa., February 13, 1780. His father came from Saxony, and was very active in establishing the Moravian church in this country. In this church young von Schweinitz was destined for the ministry, his education being acquired in the theological institutions of this denomination. When eighteen years of age, his father was called to Germany, and young Schweinitz was placed in college at Nisky, in what is now Silesia (Prussia). There he came in contact with Professor J. B. de Albertini, and the two enthusiastically pursued the study of the fungi of that region. At that time, mycology in Europe was in its formative stages, Persoon being the acknowledged authority. Albertini and Schweinitz, in 1805, published a work devoted to fungi, entitled *Conspectus Fungorum in Lusatiae*, which, with the exception of Persoon's works, was the first important, systematic publication on the subject. Although a rare book in the markets, it is to this day an authority on European plants, being quoted under the familiar title of "A. & S." The book is illustrated with twelve colored plates, picturing ninety species. These were drawn by young Schweinitz, and they are very good. I am not informed whether or not the collection of plants made by Albertini and Schweinitz is still in existence. They are not in the collection in Philadelphia, the only specimens I have ever seen being a few in Persoon's herbarium.

In 1812 Schweinitz returned to America, and was appointed general agent of the Moravian church in the Southern United States, with headquarters at Salem, N. C. Although much occupied with clerical duties, he still continued his work with fungi, and about ten years later, (1822), published at Leipsic, under the auspices of Schwaegrichen, his *Synopsis Fungorum Carolinae Superioris*. 1,373 species were listed in this work, of which 315 were claimed to be new.

In 1822 Schweinitz removed to his natal town, Bethlehem, Pa., where he resided until his death, February 8, 1834, at the age of fifty-four years. In 1831 he presented to the Philadelphia Academy

a paper, *Synopsis Fungorum America Boreali*, listing 3,098 species, of which 1,203 were named by Schweinitz. This paper was published in 1834, the year of his death, but whether or not it appeared before he died, I do not know.

During Schweinitz' life there was considerable activity in Europe in fungus work. Fries was then a young man, in the prime of his work. But in this country Schweinitz was absolutely alone, no one else apparently knowing even that such things as fungi grew. Schweinitz' herbarium is preserved in the Academy of Natural Sciences, in Philadelphia. It is in good condition, and fairly complete.

Schweinitz had four sons, all of whom were Moravian ministers. A number of his descendants still reside in the neighborhood of Bethlehem, and one, Dr. George von Schweinitz, is a prominent physician in Philadelphia. The most complete biography of Schweinitz was published in *The Popular Science Monthly*, April, 1904, and from this much of the data for this article has been taken. We are indebted to Mr. Eugene Rau, Bethlehem, Pa., for a copy of the photograph that we reproduce.

ADDITIONAL NOTES ON CORDYCEPS.

I am particularly interested in Cordyceps. They are most curious plants, usually developed from the bodies of some insect, larva, or pupa. I trust anyone who finds specimens will favor me by simply drying them and sending to my address. The host should always be dried and sent with the Cordyceps attached. If the species is small and several are found, I should like a liberal collection. The tropical species are very imperfectly known.

CORDYCEPS SOBOLIFERA, FROM J. UMEMURA, JAPAN.—This is the fourth collection we have received of this species, and as far as we noted there is not a specimen in any museum of Europe. We gave a full account of the plant in Mycological Notes No. 39. Mr. Umemura's plants are finely developed and confirm its identity with the West Indian plant. It is curious that the plant is only known from Japan and the West Indies, and illustrates the uneven distribution of fungi, or perhaps our imperfect knowledge of it.

CORDYCEPS NUTANS AND CORDYCEPS TRICENTRUS, FROM PROF. A. YASUDA, JAPAN.—These two species, which have the same form and similar hosts, are strongly distinct species, essentially different in their spores as well as their coloration. Prof. Yasuda has supplied from observation of the fresh plant the following notes:

CORDYCEPS NUTANS.—"Stroma very long. Head nodding or erect, fusiform, orange, 3-8.5 x 1-2 mm. Stipe black, except 7-14 mm. of the uppermost portion, which is orange, 5.5-17 cm. x 9.5-1 mm. Perithecia somewhat prominent. Asci slender, cylindrical, very long, 250-270 x 7-8. Ascospores filiform, at length many-celled, and then separating; separated cells *cylindrical*. *Truncated* at both ends, smooth, hyaline, *9-14 x 1.5* mic."

CORDYCEPS TRICENTRUS.—"Stroma very long, pale yellow. Head nodding, 5-10 x 1 mm. Stipe slender, 4-14 cm. x 0.4-0.5 mm. Perithecia not prominent. Asci cylindrical, slender, 120 x 5-6. Ascospores filiform, at length many celled, and then separating; separated cells *needle-shaped*, pointed at both ends, smooth, hyaline. *8-10 x 1-5 mic.*"

Fig. 855.
Cordyceps capitata.

Fig. 856.

Fig. 857.
Cordyceps ophioglossoides

CORDYCEPS CAPITATA AND CORDYCEPS OPHIOGLOSSOIDES.—Most species of Cordyceps are developed from insects, but these two are peculiar in their host, always occurring on hypogaeal fungi, viz., species of Elaphomyces. But two species are known with this habitat. Both are rather frequent in the United States and Europe. Massee would put these two species into a separate genus, on account of their host, which is hardly a logical stand for the author of Cordyceps lignicolum (sic) to take.

The distinction between Cordyceps capitata and Cordyceps ophioglossoides is not a distinction of shape, as is generally supposed, but there are two essential differences, stem attachment and spores.

Fig. 858.

CORDYCEPS CAPITATA (Fig. 855), grows directly from the host. The secondary spores (Fig. 858) are cylindrical, 3 x 12-16 mic. long. I think never 25-40, as stated in Saccardo, which record was probably based on segments that were not finally divided. The heads are usually subglobose (Fig. 855), though rarely clavate in the form called var. Canadensis, as shown in figure 860. This clavate form was named Cordyceps Canadensis by Ellis, but it is a form at the most, not a species.

CORDYCEPS OPHIOGLOSSOIDES (Figs. 856 and 857) is attached to the host by attenuated, root-like fibrils. The secondary spores (Fig. 859) are subcubical 2-3 x 3-4. As to shape, it is always club form as far as I know. It never takes the capitate form of the previous species.

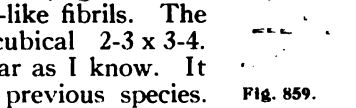


Fig. 859.

Our figure 857, which shows the characteristic root attachment of Cordyceps ophioglossoides, was made from the specimen in Tulasne's herbarium at Paris.

CORDYCEPS CAPITATA VAR. CANADENSIS, FROM J. UMEMURA, JAPAN.—The usual form of Cordyceps capitata is shown in our figure 855. It occurs in Japan also, for it was well illustrated in Illustrations of Japanese Fungi, plate 12, figure 13. At first sight it would appear that Mr. Umemura's plant was Cordyceps ophioglossoides, with which it closely agrees in form, instead of Cordyceps capitata. The spores and host attachment, however, are those of Cordyceps capitata, and it is only a form. It was named as a species by Ellis, and the local name he gave it is not very applicable to a plant growing in Japan. While both the type form and the variety of Cordyceps capitata occur in Japan, the corresponding species Cordyceps ophioglossoides is not recorded, though it no doubt occurs there.

Fig. 860.

ELAPHOMYCES JAPONICA, FROM J. UMEMURA, JAPAN.—The Elaphomyces from Japan, on which Cordyceps capitata var. Canadensis was growing, impresses me at once as being different from what I had seen. The exoperidium (cortex) (Fig. 861) had peeled away and separated from the inner peridium, a feature I never noted on an Elaphomyces before. In the nature of the warts, color of gleba, and spores, it seems the same as Elaphomyces variegatus of Europe, which, however, always has the cortex closely adnate to the inner peridium. The inner peridium, about 1 mm. thick, is only about one half as thick as that of Elaphomyces variegatus, and of a different texture. The European species has a peridium as hard as a rock. This has much softer and thinner peridium, which cuts readily. It is probably best held as a form of the European plant, but it is different in the features noted.

Fig. 861.

Elaphomyces variegatus seems to me to belong to the same section as granulatus and asperulus, but has much larger warts and thicker

peridium. I fail to see on dried specimens the "variegated cortex" from which it gets its name. Nor can I make out from my specimens the difference between granulatus and asperulus.

CATASTOMA ANOMALUM, FROM MISS A. V. DUTHIE, SOUTH AFRICA (Fig. 862).—The occurrence of this peculiar little species in South Africa is of much interest. It is the only Catastoma with a definite, protruding mouth and is unique in this respect. Heretofore it has been known principally from Australia, where it is apparently the most frequent species. The South African form is not exactly the same as the usual Australian. The mouth of these specimens is merely mammiform, while in the Australian plant it is usually definitely tubular. Also the color of the Australian plant is usually a rich brown, while the African specimens are less colored. The spores are smaller, measuring 4-5 mic., and about 6 mic. in the Australian. Of course, the South African plant would be a "new species" for some, but it is the same as the unique Australian species in its main characters, and is best so referred.

Fig. 862.

LYCOPERDON CRUCIATUM, FROM F. STOWARD, AUSTRALIA (Fig. 863).—Lycoperdon cruciatum is a common species in the United States (cfr. Myc. Notes, pp. 214, 231, Plate 51), and it is not infrequent in Europe. We get it from South America, but this is the first specimen we have received from Australia, where it must be very rare. We never had it from Africa, and it seems to be replaced in South Africa by Lycoperdon endotephrum, which has the same peculiar cortex, but violaceous gleba. Excepting these two species there is no other Lycoperdon where the cortex peels off in flakes. At Kew there is a single specimen of Lycoperdon cruciatum from Australia, called Lycoperdon stellatum. We included and illustrated it in our Lycoperdaceæ of Australia, page 32, under this name, stating at the time it was probably Lycoperdon cruciatum, a fact of which we are now assured from Dr. Stoward's specimens. It has the same gleba color, spores, capillitium, diaphragm, distinct sterile base, and similar though stronger cortex, and paler and firmer endoperidium. The slight differences do not make a species. The distribution of fungi is most peculiar. This species so common with us in the United States, is evidently most rare in Australia. On the other hand, Lycoperdon pratense, absent from the great portion of the United States, and known only from a small region in our Northwest, is the most frequent species they have in Australia.

Fig. 863.

PEZIZA CEREA, FROM MR. S. L. SPRAGUE, OHIO (Fig. 864).—We present a photograph of a very rare species, at least in this country. It grew on some woods dirt that had been brought with plant from Massachusetts. The fresh specimen was brought to us by Mr. Sprague. Peziza cerea is well named, for it has the appearance as though it were made of wax. It was illustrated by Sowerby (t. 3). In England, according to the records, it occurs usually on spent tan bark. In this country I have noted no record excepting Seaver, Iowa, which appears to me an error for the common Peziza vesiculosa.

Fig. 864.
Peziza cerea.

Color very light pinkish buff of Ridgway, waxy in appearance. When moist, concolorous, both surfaces, but on partially drying, the external surface becomes white, furfuraceous. Cups 2-3 inches in diameter, repand, laterally divided or somewhat unilateral, tapering to a short, thick, lacunose stem-like base. Asci 240 mic. long. Spores elliptical, 8 x 12 hyaline, smooth. Paraphyses slender, very slightly thickened, hyaline, straight.

There has been no good figure of Peziza cerea given. Sowerby's is characteristic as to shape, but lacks the "waxy" effect. Cooke, p. 244, has but little resemblance to it in either shape or color. Price, fig. 80, is fair. We doubt if a drawing could be made to represent it as well as does our photograph.

HYSTERANGIUM PHILLIPSII, FROM J. UMEMURA, JAPAN (Fig. 865).—The Hymenogasters are fungi that grow mostly beneath the surface of the ground. A few of them are partly emergent. In Europe the subject has been finely worked by the best workers in Europe, viz. Tulasne and Vittadini, who published splendid monographs of them. In the United States, Harkness did a lot of work on the subject. The usual mycologists rarely see them, and the foreign species are practically unknown, though they no doubt occur in all countries, though not collected, for are not observed.

The species Mr. Umemura sends from Japan has small, hyaline spores 2½ x 4, like the spores of a Rhizopogon. It cannot be either of the European species, all of which have large spores 10 mic. or more. It seems to me to agree with Harkness' account of Hysterangium Phillipsii, though of course all determinations made from descriptions are more or less doubtful. Harkness has a figure showing fibrous rootlets, not on the Japanese specimen, but they may have been broken off. The spores are also given 2 x 5, which is narrower than in the Japanese, but taken as a whole, the description and figure agree very well with the Japanese plant.

Fig. 865.

TRAMETES OCELLATA, FROM REV. TORREND, BRAZIL (Fig. 866).—This I hold as a form of Trametes hydnoides. No commoner plant occurs in the American tropics than Trametes hydnoides with its rigid, black surface hairs. Trametes ocellata is similar, the same as to context and form, but the surface hairs are softer and brown, not black. It is rare, and at first appears quite different. There is a plant in Africa, similar to Trametes hydnoides, which Hennings always referred to Trametes hydnoides. The African plant has always larger pores, and is Trametes hystrix, as named by Cooke. Another (or the same) African plant has still larger pores, then it becomes Hexagona hirta (cfr. Syn. Hexagona, page 7). In fact, there is a continued series, all with the coarse, dense, surface hairs, same context color, texture, but differing in size of pores, running as follows, from Trametes hydnoides with minute pores, to hystrix with larger pores, then Hexagona hirta still larger, and finally Hexagona apiaria with very large pores. The latter three are African and Eastern plants. Tra-

Fig. 866.

metes hydnoides is the only American one, I believe. Trametes pyrrhocreas of Australia, known only from type at Kew, is close, if not the same as hydnoides.

POLYSTICTUS RIGIDUS, FROM E. CHEEL, NEW SOUTH WALES (Fig. 867).—Pileus erect, spathulate, flabelliform (incurved and cup shape in type). Surface scabrous, hirsute, finely zoned. Context white. Stipe short (1 cm.), distinct from pileus. Pore surface smooth, pale. Pores very minute, hardly visible to the eye. Spores not found.

Polystictus embraces mostly flexible plants. This rigid, stiff species has no analogue in the other species with white context. The section (Petaloides 23) Microporus with brown context is similar as to texture. We would enter it in Section 22, though quite different from all others in this section. The pores are so minute that to the eye the plant appears to be a Stereum. The general resemblance to Stereum hydrophorum is close.

Fig. 867.

TRAMETES ALBOTEXTA, FROM P. VAN DER BIJL, AFRICA (Fig. 868).—Pileus sessile, 2-3 x 4-5 inches, an inch thick. surface reddish brown, dull, matt, soft. Context reddish brown, thin, soft. Pores rigid, small, round, an inch long. Pore tissue white, contrasting with the brown hymenium so that a section is variegated. Cystidia none. Spores pale brown, small, elliptical-subglobose, 3-4 x 4-5. The coloration of the surface, pore surface and context is reddish brown, the tissue of the pores white. I know no other Trametes or polyporoid with this peculiar color pore contrast. The pale colored spores might be the basis for a "new genus," but I think that would be "inutile."

Fig. 868.

ABNORMAL FAVOLUS.—Plants that impress me as being anomalies or sports not infrequently reach me. We present two below that we think are derivatives from Favolus europaeus, though they have no resemblance to each other, and little to the usual form of Favolus europaeus. Nor can we explain why we think they are sports of this species, but we do.

FAVOLUS KAUFFMANII (Fig. 869).—Pileus pale liver color, smooth. Pores favoloid, with thick walls. Spores 4 x 12-14 hyaline, with lateral apiculi.

Based on a collection (No. 31) from Dr. C. H. Kauffman, Michigan. I think it is a variation of Favolus europaeus, but Dr. Kauff-

Fig. 869.

man does not agree with me. It differs, as indicated above, and the color is quite different. The cuticle is closely adnate, and does not peel away as it does in the normal form. I once made in Kentucky a collection showing the same difference as to color, but that collection had normal pores. I have never considered it other than a variation of Favolus europaeus.

Fig. 870.

FAVOLUS WHETSTONEI (Fig. 870).—Stipitate, with large, angular, thin pores decurrent on the stem. Spores 4 x 10, hyaline, laterally apiculate. Pileus surface white, with faint indications of the reddish color of fresh Favolus europaeus. Based on a single specimen from M. S. Whetstone, Minneapolis. It is so different from the normal Favolus europaeus that we hardly expect others to agree with us in referring it as a sport.

ISARIA BUNTINGII, FROM R. H. BUNTING, AFRICA (Fig. 871).—The genus Isaria is supposed to be the conidial or preliminary fruiting stages of Cordyceps. (cfr. Cordyceps of Australasia, pages 4 and 5.) The perfect Cordyceps is a subsequent development. But four large Isarias are known to me on insects or cocoons, viz., Isaria farinosa (Cord. Aust., Fig. 613), Isaria atypicola Japan (cfr. Myc. Notes, p. 568), Isaria gigantea Cuba, which has never been illustrated, and the above from Africa.

Fig. 871.
Isaria Buntingii.

We present a photograph of Isaria Buntingii, which was made by Mr. Bunting, and which tells the whole story as far as known. It differs from other species in having the fruit branches, forming a capitate cluster at the apex of the stem. As will be seen, it grows from cocoons buried in the fallen leaves. We hope Mr. Bunting will favor us with specimens of the plant, and we particularly trust that he will watch out for the subsequent (Cordyceps) clubs that no doubt develop from the same host.

PILEATE MERULIUS LACRYMANS, FROM JOHN DEARNESS, CANADA (Fig. 872).—We present photographs of what we take to be pileate Merulius lacrymans. In all our books and in all specimens we ever saw, Merulius lacrymans is a resupinate plant, and it seems impossible that it could develop a pileate form. At the same time it is no more improbable than that the two specimens we photographed, one sessile apus, the other stipitate, should be the same thing, and they grew from the same mycelium and were different developments of the same plant. We know our reference will be received with incredulity, but with the same context, same tissue, same hymenium, same spores, same habitat, we believe we are correct in so referring them. There are more strange things under the sun, Horatio, than are dreamed of in your philosophy.

Fig. 872.

Prof. Dearness states that he collected forty pileate specimens, apus, pleuropus, mesopus, all with good pileate development

IRPEX OWENSII, FROM J. M. GRANT, WASHINGTON (Fig. 873).—In a pamphlet on the genus Radulum, now in type, but not printed, we include under the name Radulum Owensii, specimens received from C. E. Owens (No. 2028 on Quercus). It was a good "Radulum." In fact, we mistook it for Radulum hynoideum

Fig. 873.

when received. The plants just at hand from Mr. Grant have the teeth so much better developed that it is an Irpex instead of a Radulum, which shows how one can be mistaken as to the genera. We would describe it as follows:

Resupinate. Mars orange (when dry). Teeth at first tubercular with irregular protuberances. When developed irregular, compact, rigid, poroid at base, hence could be classed also as Poria. Cystidia none. Basidia subhyaline in a palisade layer. Subhymenial tissue deeply colored. Spores 3-4 x 6-8, hyaline, smooth.

SECOTIUM ACUMINATUM, FROM F. W. STOWARD, AUSTRALIA (Fig. 874).—The Gastromycetes of Australia are remarkable, not only on account of the many endemic species and genera not found in other countries, but the apparent absence of some common species (as Geaster hygrometricus) that occur widely distributed elsewhere in most countries. Secotium acuminatum is recorded in Australia and found in the Handbook, but like many records of this uncertain publication, there is little basis for it. The little fragments on which the determinations were made more than fifty years ago, are entirely inadequate. Many specimens of Gastromycetes have reached me from Australia, ten times more than in all the other of the museums of the world, but never before has any one from this country sent me this species! It is a species, however, frequent in the United States and Eastern Europe.

Fig. 874.

As will be seen from the photograph, Secotium acuminatum is a misnamed plant. This specimen not only is not acuminate, but it is obtuse, and with us the specimens are never more than "obtusely acute," if the expression can be allowed. This led to a most amusing position, that our own Prof. Peck held for many years. When he received the plant from Wisconsin, he was innocent of any knowledge of the existence of the genus even, but it did not deter him from discovering that it was a "new species" of Lycoperdon, to which genus it has not even a suggestion of an analogy. He called it Lycoperdon Warneri.

Hazslinsky, a local collector in Hungary, who was quite busy promulgating new species of Gastromycetes, none of them of any value as far as I ever learned, also discovered that it was a new species which he called Secotium Szabolcsense. He was quite indignant that Prof. Peck had renamed his species, and published his protest, though before he got through "indignating" he admitted that both his plant

and that of Peck were Secotium acuminatum, and that Montagne had beautifully illustrated it. Peck admitted the genus, but for many years maintained that our American plant could not be Secotium acuminatum, for it was never acuminate. As a matter of fact, neither is the European plant, nor Montagne's figure, nor the original specimen which was from Algeria. Montagne simply misnamed it, for at the best the plant is never more than "obtusely acute." The plant has an older name (from Russia), which date dictionary jugglers have tried to substitute, but as it is about as bad as acuminatum, not much success has rewarded their efforts.

Fig. 875.

STEREUM SOWERBYI, FROM J. M. GRANT, WASHINGTON (Fig. 875).—(Compare Stipitate Stereum, page 20.) This is a very rare plant in Europe, and these are the first specimens I have seen from this country. The species is very close to Stereum diaphanum, but differs in being a slightly thicker plant, not so pale, and the upper surface is marked with darker, radiate fibrils. The photograph (Fig. 875), enlarged to show these fibrils, which are the main distinguishing features.

POLYSTICTUS XANTHOPUS-CONCINNUS, FROM P. VAN DER BIJL, SOUTH AFRICA (Fig. 876).—Intermediate between these two species. Polystictus xanthopus (cfr. Stip. Pol. p. 173) is an abundant species in Africa and the East. I presume I have fifty collections. Every one of them is perfectly glabrous, both stem and pileus. Polystictus concinnus is same plant, except dark color, and pileus and stem are covered with fine, velvety pubescence. This specimen has the pubescent stem of concinnus and the nearly glabrous and pale colored pileus of xanthopus. In nature there is no "such animal" as species with definite limitations as mycologists profess.

POLYSTICTUS AFFINIS-CONCINNUS, FROM MR. VAN DER BIJL, SOUTH AFRICA (Fig. 877).—A pleuropodial plant, exactly same in color and pubescence as the preceding plant. Surely both are the *same species*, although in our system of classification they go in different sections of the genus. We refer the latter to Polystictus affinis, but it is not exactly that, for affinis is glabrous.

Fig. 876.

Fig. 877.

STEREUM SULCATUM, FROM JAMES R. WEIR, IDAHO (Fig. 878).—This species was named by Burt, but as it has been published by Peck, I suppose it is public property now. It is a hard, rigid plant, with a reflexed pileus and white hymenium, which turns red when bruised. Context white, hard, with a yellowish cast. Spores globose 5-6 mic., hyaline, smooth. Cystidia few, but large, typical, thick-walled metuloids. I do not make out any ducts found in most Stereums that bleed, but no doubt they are present.

Fig. 878.

The species is a "Lloydella," but the author does not take Bresadola's views on "Lloydella" as seriously as he does Cooke's similar views on "Hymenochaete." Logically, both genera have the same value, which is not much in either case for me. Stereum sulcatum grows on spruce and hemlock. My best thanks are extended to Mr. Weir for the specimen.

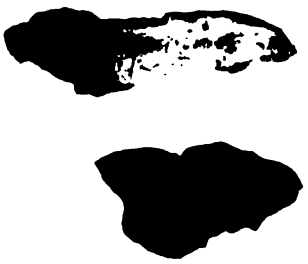


Fig. 879.

We have recently gotten Stereum sulcatum (Fig. 879) from Prof. A. Yasuda, Japan (376). It agrees with our American plant in every character. It is a Lloydella for those who recognize the genus. This is similar to Stereum annosum and Stereum ferreum, both of which, however, have brown context. Both are "Lloydellas" and both are pileate species, though based on resupinate fragments and classed in Saccardo in the resupinate section. Stereum stratosum is a similar, thick plant with pale context, but it has no metuloids. Stereum contrarium, named from Japan, from the description, could be taken for this plant, but it is Stereum princeps.

EXIDIA CANDIDA FROM J. M. GRANT, WASHINGTON (Figs. 880 and 881).—Applanate, white with grayish, cerebriform lobes. Basidia 16-20 mic. oblong or globose, with granular contents. Spores 8 x 16, hyaline, slightly curved, with granular contents, laterally apiculate. Imbedded ducts, none. Papillae, none. The basidia are borne near the surface, not deeply imbedded as in most tremellaceous plants. It has much resemblance to Exidiopsis alba. (Note 48) (not Exidia albida of Europe) but differs entirely in its spores.

Fig. 880.

Fig. 881.

Years ago in England a white, tremellaceous plant was named Tremella albida, and since it is the fashion to so call all white, tremellaceous plants. Two quite different species have generally passed under this name (cfr. Note 48), viz. Exidia albida of Europe, and Exidiopsis alba of the United States. I am confident that this species, quite different from either, would be so referred by the older namers.

We present herewith, figure 880, the dried plant as received by me. Figure 881 as it soaked out after a short time in water. No class of fungi make poorer dried specimens than tremellaceous plants, but none are more satisfactory to work with, for a few minutes soaking restores them to the same condition as when freshly collected.

We hope our correspondents in tropical countries will collect every tremellaceous plant they note, and dry it. It is a mistake to send them preserved in formaline, which destroys their color and often turns them into an amorphous mass.

DACRYOMYCES DIGRESSUS, FROM MISS A. V. DUTHIE, SOUTH AFRICA (Fig. 882).—Thin, gelatinous, cerebriform. Color pale, dirty yellowish. Basidia forked. Spores 6 x 12, slightly curved, laterally apiculate, hyaline, smooth.

Fig. 882.

This resembles Tremella lutescens but has entirely different basidia. It departs from the usual Dacryomyces, being larger with aspect of a Tremella. I know but one other, viz. Dacryomyces aurantius of the United States. The spores are those of Dacryomyces as to shape, but I found none septate which is rare in this genus. They probably become septate in germination.

MYCOLOGICAL NOTES.

BY C. G. LLOYD.

No. 45.

CINCINNATI, O. JANUARY, 1917.

PROFESSOR ROLAND THAXTER.

MYCOLOGICAL NOTES

Issued by C. G. LLOYD.

224 West Court Street, - - CINCINNATI, OHIO.

SUBSCRIPTION PRICE.—A little personal interest on the part of the recipient in picking up and sending to my address, specimens of the larger fungi. All are desired excepting specimens of fleshy Agarics. Simply dry the specimens and send them in.

PROFESSOR ROLAND THAXTER.

The photograph we present is that of the best known of specialists working on American mycology. Professor Thaxter occupies the chair of Cryptogamic Botany at Harvard University, where he graduated in 1882. For about twenty-five years he has had charge of the students in mycology in Harvard University. Professor Thaxter is the world's authority on the class of fungi known as Laboulbeniaceae. These fungi are minute species, attaching themselves to the bodies of beetles, flies and other insects. They were practically unknown to the world until Professor Thaxter became interested in them, and he has devoted his life to their study. He has discovered, named and illustrated several hundred species, and is not only the world's authority on the subject, but he is the only one who really knows anything about it at all. In pursuit of his studies he has worked over not only the mycological section in the museums of Europe, but also the entomological section, and has traveled and collected extensively in foreign countries, such as the West Indies and South America. In addition to this, he has industriously collected Cordyceps and hypogeal fungi, and has accumulated more material in these families than can be found in any other collection. He has never published on these subjects, but has in view a publication, when he has finished with the Laboulbeniaceae.

Professor Thaxter is now in his fifty-ninth year, quiet and reserved. It is always a pleasure to meet him. On our rare visits to Harvard we have always enjoyed a visit with him. The photograph that we present was taken four or five years ago, but is an excellent likeness of him to-day.

RARE OR INTERESTING SPECIES OF FUNGI RECEIVED FROM CORRESPONDENTS.

POLYSTICTUS FLABELLIFORMIS VAR. JAPONICA, FROM J. UMEMURA, JAPAN. Polystictus flabelliformis (cfr. Stipitate Polyporoids, page 143) is a common species in the East. It is the only one in this section I found in Samoa. It usually corresponds to the type idea from Mauritius with a lateral stem, one half to an inch long. A subsessile form is the common form in Japan. It is paler color, the pores are whiter, and it is a fairly constant form in Japan, but not elsewhere. We have specimens as follows: Umemura, 15, 73, 76, 154, 175; Yasuda, 115, 253. (We have one collection from Madagascar.) Professor Yasuda writes, "These sessile, villose

Fig. 883.

specimens appear to run gradually into stalked, smooth specimens." The stalked, smooth plant is known as Polystictus affinis, but the whole group is really one species. Where a plant has a fairly distinct character (subsessile in this case) in connection with geographical distribution (Japan in this case), we feel that it is entitled to a distinctive name as a variety at least. In the past we have referred some of these Japanese collections to Polystictus pterygodes, but this species (very rare) has in its type idea a shiny, glabrous pileus, the same as Polystictus xanthopus, but sessile.

LACHNOCLADIUM CONGESTUM, FROM E. CHEEL, NEW SOUTH WALES (Fig. 884).—Berkeley named this plant as Thelephora. There is in warm countries a type of dendroid plants that should be classed in Clavariaceae, viz., the hymenium is amphigenous and they resemble Clavarias excepting that they are tough in texture and in their spores. The true Thelephora genus has its hymenium on one surface only (though there are exceptions). The

spores of this species are 6 x 8, colored, slightly irregular in outline, and very slightly tubercular. Each has a large gutta. The proper generic classification is a question. As to color and spores it is close to Thelephora. As to general form and amphigenous hymenium it is Clavariaceae. It is not a true Lachnocladium excepting in a broad sense, including both hyaline and colored spores. No species of this type of plants occurs in Europe or the United States, hence we are not troubled with the question of its proper classification in our own flora.

Lachnocladium congestum seems fairly common in Australia. We have gotten it before, but these are the first good specimens. Lach-

Fig. 884.

Fig. 885.

nocladium Archeri (Thelephora for Berkeley) is a very similar plant, but more slender and only known from the type. We present a photograph of Lachnocladium congestum (Fig. 884), also Lachnocladium Archeri (Fig. 885), both from the types at Kew. We judge from our photographs that Lachnocladium Kunzii from Java is the same as Lachnocladium congestum. Why Berkeley called one Lachnocladium and the other Thelephora, I do not know.

POLYPORUS POCULUS, FROM MISS A. V. DUTHIE, SOUTH AFRICA (Fig. 886).—A fine collection, and the first time ever collected in Africa. A full account was given, Myc. Notes, Old Sp. Ser., p. 45. This unique little species was originally from the United States, and, until I investigated, it was supposed to grow nowhere else. It is rare in foreign countries, but in the museums of Europe I dug up four collections (cfr. Myc. Notes, Pol. No. 3, p. 44), French Guiana, Australia, Brazil and Japan. I have since gotten fine collections from Japan (A. Yasuda). Now that Miss Duthie has found this curious species from Africa, it is known from every continent excepting Europe. With us it usually grows on chestnut bark; Miss Duthie found it on eucalyptus.

Fig. 886.

IRPEX CONSORS, FROM J. B. CLELAND, AUSTRALIA (Fig. 887).—Irpex consors (1877) from Japan, Irpex brevis (1855) from New Zealand, Irpex decurrens (1891) from Japan, and probably Hydnum meruloides (1883) from Australia, are all, I believe, one and the same species. All were named by Berkeley, but Irpex decurrens was only a mss. name for the collection that Berkeley published as Irpex consors. Fifteen or twenty years after Berkeley had named it (for the third or fourth time), Cooke dug up the same collection from Japan which he published as Irpex decurrens. Lately I have gotten several collections from Japan (which I referred to Irpex consors), and on comparison I find in all things the same as the Australian plant. It does not occur in the American flora.

Fig. 887.

Fig. 888.

POLYSTICTUS SINUOSUS, FROM JOHN A. STEVENSON, PORTO RICO (Fig. 888).—This is the same plant as Poria sinuosa, excepting it develops a narrow, reflexed pileus. Poris sinuosa in Europe and the United States is always resupinate. It is very close to Polystictus pinsitus, but the sinuate hymenium (Fig. 888) is of a different type. It is also quite close to Polystictus Blumei of the East.

POLYSTICTUS GLABRATUS, FROM PROF. A. YASUDA, JAPAN (Fig. 889).—Pure white, drying white. Pileus spathulate or cuneiform from a short, stipe-like base. Context thin, white. Surface uneven, glabrous, very faintly zoned. Pores small, round, fleshy, entire. Cystidia, none. Spores allantoid, 1½ x 4-5.

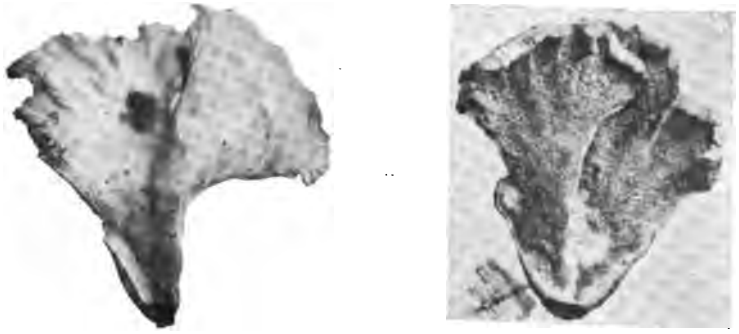


Fig. 889.

A Polystictus with glabrous surface is rare. We have one in the United States (P. Grayii) which differs in form and texture. The description of Polystictus cuneiformis from the Philippines is the same as to the pileus, but the spores (unless they are in error) are entirely different. Berkeley has a Polystictus sub-pellucidus from Japan which is close. The type at Kew is quite poor and was described as silky, hirsute. Polystictus elongatus, a common plant in the East, is also close, but differs as to texture, surface and pores. Type, Yasuda, No. 372.

LENZITES GUINEENSIS, FROM P. VAN DER BIJL, SOUTH AFRICA (Fig. 890).—This is another of the old Friesian species, originally named from South Africa, of which no type exists, and is determined from the description. Fries gives a figure in Reliquias Afzelianae which corresponds closely enough. Surely it is only a form of Lenzites betulina (as originally referred by Fries), with the same surface and context color (white), but it is a more rigid form than the European, and has thick, rigid gills. It differs from the description, as the edges of the gills are not "dark, cinereous," but it is not worth while embarrassing the subject with a new name because of a little discrepancy of this kind. We have gotten the

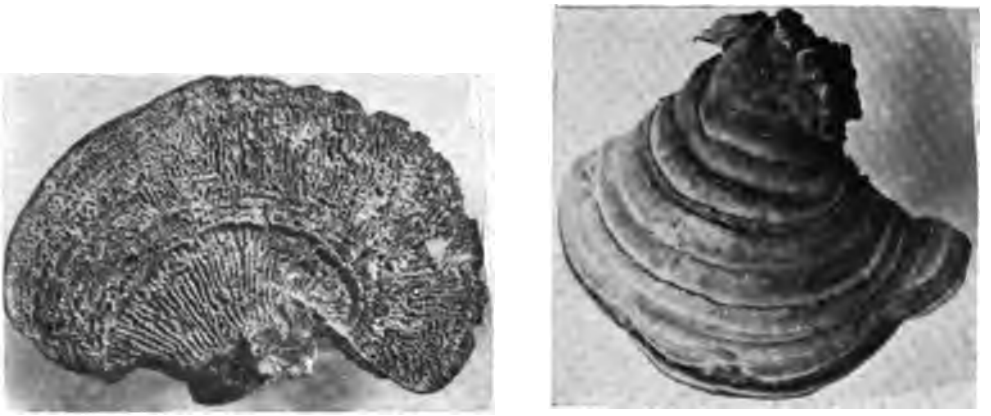


Fig. 890.

Lenzites Guineensis.

plant before from Miss Duthie, South Africa, and it seems to be, as far as we know, a form peculiar to this region.

POLYPORUS (GANODERMUS) UMBRACULUS, FROM J. GOSSWEILER, AFRICA OCCIDENTALIS (Fig. 891).—This was named by Fries from Afzelius' collection from Sierra Leone about ninety years ago, and I did not find a specimen in any museum of Europe. While no type is known, coming from the same locality, agreeing with the description, and agreeing with the figure that Fries cites, there is no question of its identity. When Persoon published the fungi of Gaudichaud's collection, he figured a Polyporus (t. 2, f. 2), which in grosser features is the same as this plant. Persoon named it Polyporus leptopus. It came from the East Indies, and the type is preserved at Paris. Fries referred this figure to his previously published Polyporus Umbraculus, and Patouillard accepted it, but in my work I demurred, for we knew what Polyporus leptopus was, and we did not know what Polyporus Umbraculus was. I feel that the receipt of the specimen from the "type locality," agreeing exactly with the figure and description, and *differing entirely in spores* from Polyporus leptopus, justifies my conclusion. Both species have the same strongly laccate, black stem, fragile and hollow, and the same pileus and pores, but are quite different in their spores.

Polyporus leptopus has globose spores, 12 mic., strongly rough and without apiculus. It belongs in section Amaurodermus (6b). Polyporus Umbraculus has obovate spores, tapering to a strong hyaline, apiculate base, about 12 mic. long and 10 at the broadest part. They are also strongly rough and are very abundant in the specimens. It belongs in the section (3) Ganodermus. Polyporus Henningsii (cfr. Stip. Pol., page 105, fig. 401) is probably the same as Umbraculus—a short-stemmed form of it.

It affords me more gratification to get one of these old puzzles settled than it would to receive a hundred "new species."

Fig. 891.

MUTINUS BAMBUSINUS, FROM J. GOSSWEILER, WEST AFRICA.—It is a question whether the tropical plant that passes for Mutinus bambusinus is really distinct from the Mutinus caninus of Europe. The specimen from Mr. Gossweiler, Fig. 892, is smaller and more slender than our figure of Mutinus bambusinus (cfr. Syn. Phalloids, fig. 26). The coating of gleba is thick and is separated at the base, giving it a pileate appearance. The plant has no pileus, however, the gleba is borne directly on the stem. The "species" of Mutinus have few distinguishing characters, excepting general size and shape, but we would not like to propose a new name for a collection that is only smaller and more slender than usual.

Fig. 892.

THELEPHORA MYRIOMERA, FROM E. CHEEL, NEW SOUTH WALES (Fig. 893).—I judge from description it is this plant which was named from Australia. It is not a European form, although it might be taken for a lacerate form of Thelephora terrestris. It is a true Thelephora as to color and spores, with hymenium on the lower side only. No type of Thelephora myriomera exists, and I think we are justified in taking this name for a plant from the same country, and answering the description.

Fig. 893.

SEISMOSARCA HYDROPHORA, FROM DR. J. B. CLELAND, AUSTRALIA (Fig. 894).—Additional specimens clear up the mystery that surrounded this plant (cfr. Note 431). The hairs that I supposed were on the surface are really, I think, "gloeocystidia," and imbedded in the jelly. The basidia are oblong, cruciate, divided, with four long sterigmata. The spores are 6 x 12, elliptical, *pale* yellow tint. The hairs and basidia, both in a mashed piece, appear on the surface, but I believe they are imbedded in a very transparent mucilage. The color of the plant is pale amber. The structure of this plant is similar, and it is cogeneric with the common plant we have, called Exidiopsis alba (Letter 44, Note 48).

Fig. 894.

The genera of Tremellaceae are not all clear as yet. We believe Seismosarca to be same as Exidiopsis in sense of Moeller, but not of Brefeld. In this view our American plant becomes Seismosarca alba (not Exidiopsis alba as in Note 48). There is no doubt of the identity of Cooke's genus, notwithstanding that Cooke did not in his account and figure present a single feature correctly and did not

have the genus in its real character. The "setae" which Cooke shows as rigid, sharp, colored spines are in reality obtuse, colored bodies imbedded in the thin, gelatinous outer layer so that they appear on the surface, but have no resemblance, however remote, to Cooke's figure. The basidia are typically those of an Exidia as shown by Brefeld, and well known, with no resemblance to the clavate basidia of Cooke's figure, which no true tremellaceous plants have. The spores are elliptical, 6 x 12, pale yellow tint, and similar to Exidia spores. There are species of Dacryomyces with as deeply colored spores, and there was no basis for a genus on the color of spores. Cooke represented them as "bright brown," which I have always thought was a bull, for no tremellaceous plant is known with deeply colored spores. The spores that Cooke described and figured are found on the specimen at Kew, but they are accidental, probably from some Coniophora, as I suspected when I saw them, and of which I am now assured.

PORIA XYLINA, FROM A. YASUDA, JAPAN (Fig. 895).— Pure white, soft cottony, with broad, soft margin. Tissue of hyaline, loosely woven hyphae. Pores large, angular, oblique. Cystidia none. Spores abundant, elliptical, 6 x 8, transparent hyaline, with a large gutta.

Fig. 895.

This is not a European nor an American species, and probably not named. The specimen is resupinate, hence a Poria, but it has a nodular effect, as though it might develop a pileus, in which case it would be a Polyporus. It is too soft for a Trametes.

PORIA SUBICULOSA, FROM MR. C. J. HUMPHREYS, WISCONSIN (Fig. 896). — We present a photograph as it is a rare species. Heretofore it has been collected but once by Peck in 1879 and does not occur in Europe. It belongs to the ferruginous section and is characterized by its large pores, soft, loosely adnate subiculum. The plant has no setae and spores are globose, hyaline 5-6 mic. Professor Humphrey found it on very rotten hemlock.

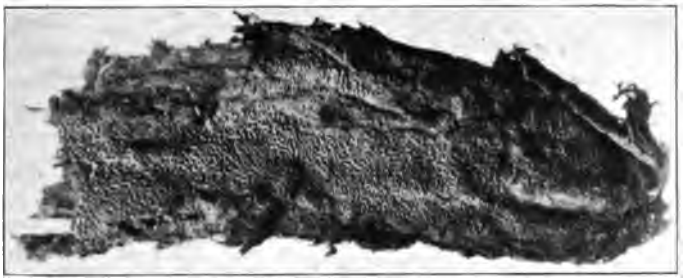


Fig. 896.
Poria subiculosa.

CATASTOMA MAGNUM, FROM GEORGE BROWN, NEW ZEALAND (Fig. 897).—This is only a large form of Catastoma anomalum (cfr. Lyc. Aust. page 27, Myc. Notes, page 319). But in addition to its large size it differs in other respects. The exoperidium is thick and leathery. In the type form of Catastoma anomalum it is thin and papery. The spores are 6-7 mic. and strongly rough, in anomalum they are slightly rough. Usually they are apedicellate, sometimes with a short, hyaline pedicel, 4-5 mic.

Fig. 897.

We consider it only a form of Catastoma anomalum, but it differs in the same degree that Catastoma subterraneum differs from Catastoma circumscissum. Neither Catastoma subterraneum nor Catastoma magnum are distinct species from the corresponding Catastoma circumscissum or Catastoma anomalum for me.

ASEROE RUBRA, FROM GEORGE BROWN, NEW ZEALAND.—We present a photograph of this plant (Fig. 898) made from a dried specimen sent by Mr. Brown. It shows how characteristic phalloids are when carefully dried. This figure presents the plant almost as well as the photograph of the fresh plant we produced on page 522 which was from Australia. This New Zealand plant has a shorter, thicker stem than the Australian plant photographed, but surely the same species. In fact it has become very well established now that there is but one species of Aseroe in Australasia, although the Handbook carries three (including a "variety").

Fig. 898.

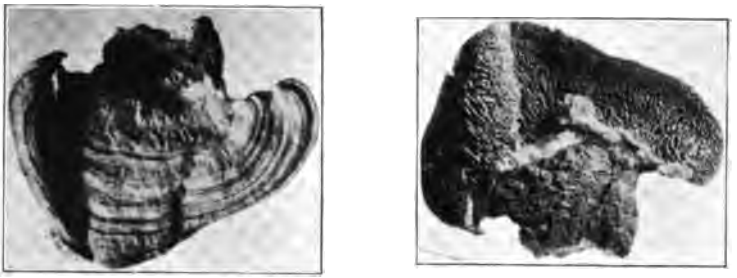


Fig. 899.
Polystictus formosae.

POLYSTICTUS FORMOSAE, FROM A. YASUDA, JAPAN (Fig. 899).—Pileus thin, pale, glabrous, rugulose, with narrow darker zone. Context white. Pores large, rigid, angular, shallow.

A single specimen, No. 391, from Formosa. The pores are exactly the same as those of Polystictus Persoonii, and while I can not assert it, I have a feeling that it is an extreme form of this species. Type Yasuda, 391, Formosa.

BOVISTELLA OBLONGISPORA, FROM MISS A. V. DUTHIE, SOUTH AFRICA.—Peridium thin, globose 1-2 cm. in diameter. Cortex furfuraceous. Gleba compact, olive then umber. Sterile base none. Capillitium deep colored, long, intertwined, much branched, about 3 mic. in diameter. Spores (Fig. 900) regular 4 x 6 mic. oblong, dark colored, smooth, with a short, thick, permanent, subhyaline pedicel 4-5 mic. long.

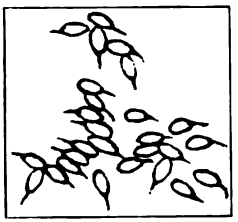


Fig. 900.

This species belongs to the 4th section of the genus (Myc. Notes, page 285) and is the only species of Bovistella known with oblong spores. The plant is quite similar to Lycoperdon oblongisporum in several respects, but the latter does not have pedicellate spores.

POLYPORUS OBNIGER, FROM DR. F. STOWARD, AUSTRALIA (Fig. 901).—Pileus (about 2 x 3 x 7 cm.) with a short lateral stipe, thick, rigid. Surface smooth, black. Context pale isabelline. Pores minute, round, with greyish cinerous mouths (when dry), decurrent to base of stem. Cystidia none. Spores not found.

Fig. 901.

This has the aspect of a Melanopus, but there is no indication of black on the stem. It goes in Section Petaloides 19 of my Stipitate

Polyporoids pamphlet, but if I were rewriting it I would rearrange this section 19, uniting subsection *a* with previous subsection and renumbering 19*b*. From the description one might take this to be Polyporus tristiculus of South America, but to me plants have little relation excepting the arrangement.

CYCLOMYCES GREENII, FROM J. UMEMURA, JAPAN (Fig. 902).—The occurrence of this rare plant in Japan is of the greatest interest. For many years it was looked upon as among the rarities of the United States and it is not often collected with us. A full account was given in Mycological Notes, (page 488). We reproduce a figure to give the Japanese collectors an idea of this curious fungus. The gills are concentrically arranged directly contrary to the usual way gills are placed. Mr. Umemura's plant is undeveloped but is unquestionably the same as our American plant. Only twice before has Cyclomyces Greenii been collected in the East and both times discovered to be a "new species." First by Hooker in India sixty years ago, and called by Berkeley Cyclomyces turbinatus, then it was sent to Patouillard from Java twenty years ago, and called Cyclomyces Javanicus. This is the first time we have ever gotten it excepting from United States. When the truth is learned about fungi, it is found that the species are relatively few, the distribution wide.

Fig. 902.

IRPEX IYOENSIS, FROM A. YASUDA, JAPAN (Fig. 903).—As named by Professor Yasuda. Effused with reflexed pileus. Surface faintly zonate, dark. Spines 2-3 mm. long, irregular, connate at base. Hymenium dense, pubescent with short (8-12 mic.) subhyaline, projecting hairs, and with rare long (projecting 30-35 mic.), deep colored setae. Spores no doubt hyaline, not found. There are numerous small, hyaline, globose bodies 2-3 mic. which I take to be conidial spores.

Fig. 903.

Irpex iyoensis is closely related to the common Irpex cinnamomeus of the United States, which however, never develops a pileus, and which has exactly the same colored spines, but abundant setae. The spines of the two species are same color and appearance to the eye. I know no other species with cin-

namon colored spines. The pileus of specimens received is dark colored, but appears to me as though weathered, and I presume the natural color is cinnamon. The plant came from the province of Iyo and I suppose the name is Iyo latinized. In this connection, it is strange that our most abundant Irpex cinnamomeus has not been found in Europe or Japan.

THELEPHORA FLABELLARIS, FROM DR. M. S. WHETSTONE, MINNESOTA (Fig. 904).—This is a rare form. With same texture and surface as Thelephora caryophyllea, it is cut into

Fig. 904.
Thelephora flabellaris.

narrow segments. Berkeley who collected it in England, followed Fries in holding it as an "irregular branched frond" of Thelephora caryophyllea. I doubt it although it is so rare, it is hard to say. I never saw but three specimens, the English plant at Kew, a collection from O. M. Oleson, California, and this one from Mrs. Whetstone.

THE TROPICAL XYLARIAS.

The principal published work on the foreign Xylarias has been done by Cooke, who arranged and illustrated a series of figures. It is needless to say to those who have checked up after Cooke's work that it was very inaccurately done, and that many of his figures were simply reconstructed. The more recent workers, Rehm and Theissen, who have not studied the authentic types, have evidently reached many of these conclusions, mainly from Cooke's work, with the natural result that they have still further added to the confusion. I have never given the subject the detailed study in the museums that I would have wished, but I have photographed all the type specimens I found, and with these photographs and with the published accounts I think I can reach much more correct conclusions than have been previously recorded.

I shall be very glad if my correspondents will collect and send me the Xylarias that they note. These plants have a young, conidial

condition, usually white or partially white. The specimens should be collected when they are mature, that is, when they are all black. They never get too old to collect and furnish all the data, but they are often gathered too young.

"XYLARIA" FLABELLIFORMIS.—In our article on Isaria flabelliformis, Myc. Notes, p. 547, we state that we think no one but Schweinitz ever claimed to have found any but conidial spores. We forgot to mention it, but we were aware that Cooke had figured

Fig. 905.

Isaria flabelliformis (from nature).

Fig. 906.

Cooke's idea.

the fruiting body of "Xylaria flabelliformis" Grevillea, Plate 171, Fig. 153 (reproduced, Fig. 906). Of course, Cooke was a wonderfully talented man. It takes something more than ordinary genius for a man to draw a picture of a fungus that he never saw. We present above a photograph (Fig. 905) from nature of "Isaria" flabelliformis, a frequent plant with us. Schweinitz claims that it had a perithecioid stage, and we reproduce his figure (907), which, while crude, was evidently intended to represent the plant. Fries stated, on the basis of Schweinitz's figure, no doubt, that it was the conidial state of Xylaria corniformis. I do not believe that there is any ground for that, but it was taken up and appears in Ellis' N. A. Pyrenomycetes. And finally Cooke was able, with his wonderful talent, to construct (in his imagination) a perfect plant (Fig. 896) which no one but Cooke (in his imagination) ever saw.

Fig. 907.

XYLARIA SCHWEINITZII, SENT BY DR. SYLVIO BONANSEA, MEXICO.—This species was originally collected in Surinam by Dr. Hering, of Philadelphia, and given to Schweinitz. Schweinitz did not publish it, but named it in manuscript Spheria capitata. After Schweinitz's death his herbarium was sent to Berkeley (Note). Ber-

keley published this as "Xylaria Schweinitzii, Berkeley and Curtis," thus advertising the three middlemen, none of whom had much to do with it excepting to pass it along. The original collector was left out in the cold in this advertising scheme, and the clerical trinity gathered all the glory.

Fig. 908.

Xylaria Schweinitzii is the same type of plant as Xylaria polymorpha. It has the same stroma, and similar perithecia. When fully developed, it has a subglobose head, and a slender stipe. The spores, 10 x 28, average broader, but it belongs close to polymorpha.

NOTE—We have noted this statement somewhere in print since our Letter No. 50 was published. At that time we reached the same conclusions, but only by inference, which, however, proved to be correct.

XYLARIA VARIABILIS, FROM J. GOSSWEILER, AFRICA OCCIDENTALIS (Fig. 909).—We determine this purely on the principle of the doctrine of probabilities. It came from the "type locality." While it has not much resemblance to the picture that Currey gave, it is about as near as most pictures that are supposed to represent Xylarias, nearer than many of them. In addition, it agrees with a remark of Currey's, "The inner tissue collapses in drying (as is the case with many Xylarias), leaving the bark (so to speak) in the form of a brittle, detached integument." This is shown in our photograph (but not in Currey's picture), and it is a better character than Mr. Currey thought. We have photographs of most of the historical specimens in the museums, excepting the relatively few that are in the British Museum. The facilities for photographing there were not as convenient for me as in other museums. Mr. Gossweiler's specimens also agree with the "type" in another feature—they are immature.

Fig. 909.

The perithecia are arranged in lines, on the order of those of the well-known Xylaria grammica of the American tropics, and the two species will go in the same group, if indeed they are not finally referred to the same species.

The determination of species by deduction is not very satisfying, as must be admitted, but it is better than past work that has been done on tropical species, most of which was pure guess work. We do not believe any portion of mycology is in a worse condition than that of the foreign Xylarias.

MYCOLOGICAL NOTES.

BY C. G. LLOYD.

No. 46.

CINCINNATI, O. FEBRUARY, 1917.

PROFESSOR C. H. KAUFFMANN.

MYCOLOGICAL NOTES

Issued by C. G. LLOYD.

224 West Court Street, - - CINCINNATI, OHIO.

SUBSCRIPTION PRICE.—A little personal interest on the part of the recipient in picking up and sending to my address, specimens of the larger fungi. All are desired excepting specimens of fleshy Agarics. Simply dry the specimens and send them in.

PROFESSOR C. H. KAUFFMANN.

The photograph this month is of Professor C. H. Kauffmann, who is well known among the mycological workers of this country. He is a graduate of Harvard University, and is a professor in botany and curator of the Cryptogamic herbarium of the University of Michigan. Professor Kauffmann is one of the few American mycologists who has systematically studied our American agarics. He specialized on the genus Cortinarius, and is, we think, the only one in this country who has any knowledge of this difficult genus. We met Professor Kauffmann some years ago in Sweden, where he was making a special study of the Swedish Cortinarii. He is a close and careful student, and a liberal contributor to our museum. Rarely a season passes that we do not get from Professor Kauffmann a nice sending of rare and critically studied species.

Professor Kauffmann's ancestors were of the good old Pennsylvania Dutch stock, that has produced such workers as Schweinitz and Dr. Herbst. Some years ago we spent several weeks visiting Dr. Herbst in the section where the Pennsylvania Dutch reside, and we have a warm place in our heart for anyone who has sprung from this stock. Professor Kauffmann has written a number of interesting works, and has now in press a systematic arrangement of the agarics of Michigan, which we hope will be shortly published.

Professor Kauffmann is a conservative mycological worker, not tinctured with the ideas of the modern name-jugglers, and we hope his forthcoming work can be used as a basis for a manual of American agarics. Excepting the monographs of Professor Peck, there is very little now on the subject of much value.

THE GENUS MESOPHELLIA.

As we have previously stated in our Lycoperdaceae of Australia, the genus Mesophellia is the most curious genus known of the Gasteromycetes. It has in its center a hard, white core of the texture of the finest grained hard wood. The gleba lies between the core and the peridium. In all species heretofore known the gleba is greenish olive: in a species recently received from C. C. Brittlebank it is pinkish buff, with no green tint. Also in all species heretofore known the core is joined to the inner peridium by ligaments of the same hard tissue that proceed from the core. In this species there are no ligaments. The genus Mesophellia is only known from Australia, and excepting the specimens in our museum, most we have seen are at Kew. There are four species well enough represented to be named.

MESOPHELLIA ARENARIA (Fig. 910).—Exoperidium of coarse, fibrous tissue. Endoperidium thin. Gleba greenish olive. Spores elliptical, 5x10 mic., smooth. Core attached by ligaments. Although we have no specimens of this species, it is the best represented at Kew. It was the original species, collected in Tasmania, by Archer, and well illustrated by Berkeley in the Trans. Linn. Soc., Vol. 22. Afterwards Berkeley received it from Mueller, a more abundant collection by Muir ("Garden River, West Australia"), and tried to change its name to Inoderma, but to no avail. The bull made by Dr. Hollós in connection with the plant is explained in our Australian Lycoperdaceae in a note on page 40. Hollós discovered it was a "new genus" about twenty years after it was named. Cooke also got specimens and named it Diploderma glauca. The genus Diploderma of Cooke was made up of Mesophellias, Gallacea, and unopened Geasters, plants without the slightest resemblance or affinity to each other. Our figures, (910), made from specimens at Kew, show a specimen with the outer peridium, also a section with gleba and a section showing the core and ligaments attaching it to the inner peridium, the gleba having been dissipated.

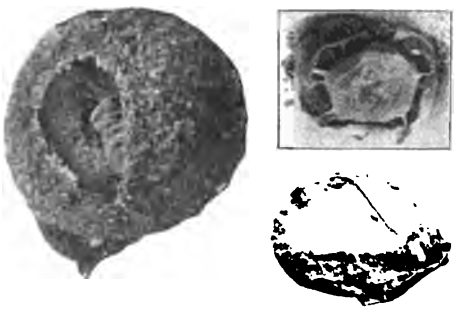


Fig. 910.

MESOPHELLIA SABULOSA (Fig. 911).—Exoperidium in the nature of an agglutinate sand case, other characters as those of M. arenaria. This was named by Cooke as Diploderma sabulosum. I have a specimen from J. G. O. Tepper, but it is evidently a rare plant. It may be the same as Mesophellia arenaria, but the texture of the exoperidium appears to me quite different. Our figure 911

shows the core in situ in the peridium with the ligaments binding them together. The gleba has been dissipated. Also a figure of the core separate.

Fig. 911.

MESOPHELLIA PACHYTHRIX. This also may be Mesophellia arenaria, but the type (all that is known) has capillitium of a different color, much coarser, being compared in color and texture to the fiber of the outer shell of a cocoanut. The spores also appear minutely warted. It is only known from one collection at Kew, called Diploderma pachythrix, by Cooke.

MESOPHELLIA CASTANEA, FROM C. C. BRITTLEBANK, AUSTRALIA (Fig. 912).—Peridium of thick, hard, woody tissue. Surface smooth, pale. Gleba pale pinkish color. Capillitium slender, matted, subhyaline threads about 3 mic. in diameter. Spores elliptical, 5 x 10 mic. smooth, subhyaline. Core hard, woody, not attached to the peridium by ligaments.

The species of Mesophellia hitherto known all belong to the same group with greenish gleba, thin endoperidium, and core attached by ligaments. This specimen from C. C. Brittlebank, Mel-

Fig 912

bourne (No. 19) differs in several respects, the gleba color, the free core, and the thick, uniform, hard peridium. If the specimen ever had an outer peridium no trace remains. Excepting as to color, it is about the size and appearance of an Italian chestnut. Our figure (912) shows an outer view, a section with the core and gleba in situ, and the core separate.

EFFETE MATTER.

The following names in this section may be eliminated. Mesophellia ingratissima, Berkeley, no type exists and description is not definite. It was said to be "strongly scented." Mesophellia Scleroderma, Cooke, is Gallacea, with no affinity to Mesophellia. Diploderma glaucum, Cooke = Mesophellia arenaria. Diploderma sabulosum, Cooke, is a Mesophellia. Diploderma pachythrix, Cooke, is a Mesophellia. Inoderma arenarium, Berkeley, was a name change for Mesophellia arenaria which did not take.

THE GENUS DIPLODERMA.

The genus Diploderma was based on the idea of a puff ball that does not open, and we have decided to use the generic name, notwithstanding that the original and most of the proposed species of Diploderma are bulls. (Cfr. Myc. Notes, p. 181.) About a hundred years ago Link proposed the genus Diploderma, basing it on an unopened specimen of Geaster hygrometricus, still preserved at Berlin. Seven species from Australia and one from Hungary have since been added, most of which are unopened Geasters.

It was Cooke, in his Australian Handbook, who brought the "genus" into prominence and disrepute. He defines it as having a "central, woody nucleus," which definition belongs to Mesophellia (see previous genus), not to Diploderma, and then as evidence of the care that Cooke bestowed on his work, after so defining the genus, two-thirds of the "species" he includes do not have "central, woody cores." He includes six species; two are Mesophellias, two are unopened Geasters, and two, D. suberosum and D. album, are immature, but probably good species of something, if they were adequately known. Both have globose spores, but otherwise appear as though they may be cogeneric with Diploderma avellaneum.

The genus, excluding the Mesophellias and unopened Geasters that do not belong to it, could be defined as follows:

Peridium double, the inner usually hard and rigid. Dehiscence none, or at least unknown. Sterile base or central core none. Capillitium hyaline. Spores elliptical or globose, very pale color or hyaline.

This genus, only known from Australasia, is close to Mesophellia, differing in having no central core.

DIPLODERMA AVELLANEUM, FROM C. C. BRITTLEBANK, AUSTRALIA (Fig. 913).—Peridium 1 to 2 cm. in diameter, globose, about the size and color of a hazel nut. Outer peridium thin, closely adnate. Inner peridium thick, hard, woody, white. Gleba pale buff color (near chamois; Ridgway). Columella or core, none. Capillitium scanty, cobwebby, hyaline. Spores elliptical, 5-6 x 8-12, pale ochraceous, subhyaline, minutely warty.

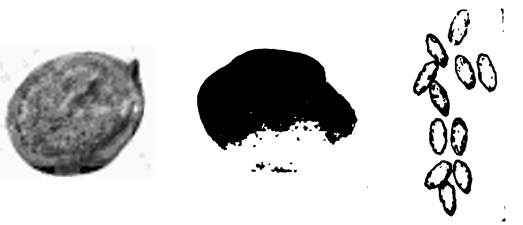


Fig. 913

Two specimens (Fig. 913) were received from Mr. Brittlebank (No. 2). Neither shows any signs of dehiscence.

DIPLODERMA INSOLITUM, FROM C. C. BRITTLEBANK, AUSTRALIA (Fig. 914).—Plant 2-3 cm. in diameter, without rooting base. Exoperidium thin, but rigid, pale. Gleba filling the peridium, pale, rosy color. Capillitium cobwebby, of hyaline, flaccid threads. Spores varying 7-8 x 12-16, elliptical, pale, subhyaline, minutely

rough. Cystidia (Fig. 915) large, thick-walled cells, varying much as to shape, but usually stalked at the base.

The permanent cells found in the gleba are unusual. I have been examining the gleba of Gastromycetes for many years, and I never before noted similar bodies in the ripe gleba. Miss Wakefield, to whom I sent a specimen, suggests that they are cystidia, and I believe she is right. We know that there are species of Gastromycetes such as Secotium, that do have cystidia in the hymenium, and "new genera" are even based on them. But they disappear in deliquescence, and are not found in the ripe gleba. That these bodies in the ripe gleba of Diploderma insolitum are cystidia is probable, but it is strange that they do not disappear like the basidia and hypheal tissue, in deliquescence. As far as I know, there is no other analogous case, excepting perhaps the curious cells of Battarrea. Type from C. C. Brittlebank, Melbourne, Australia (No. 3).

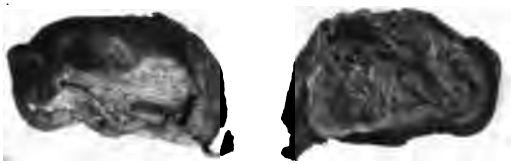


Fig 914

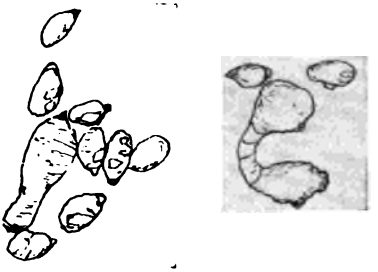


Fig. 915.

DIPLODERMA CASTOREUM (Fig. 916).—Peridium double, about of equal thickness, smooth, fibrous, tough. (Dehiscence?)

Fig 916.
Diploderma castoreum.

Gleba pale, filling the cavity. Capillitium interwoven, hyaline, tortuous threads. Spores elliptical-fusiform, 8 x 16, hyaline, or pale greenish color, rough.

This has a strong, rooting base (Fig. 916), and was named Castoreum radicatum. In its peridium, gleba, capillitium and spore features it agrees with Diploderma, and should be united to this genus. "Puff balls" are not classified by their "roots." It is known from a couple of specimens at Kew collected at St. George's Bay, Tasmania, by G. Wintle. One of the specimens, as shown in our figure, is double, but that is probably not usual. The collector states that the plant is "eaten by kangaroos and bandicoots." We considered this plant in our Lycoperdaceae of Australasia. It must be a rare plant, and probably does not occur in Australia, for it never reached me from any collector.

DIPLODERMA SUBEROSUM.—This was based on an immature specimen (gleba not fully deliquescent), with a thick, pale exoperidium and a thin, black endoperidium, no core, no sterile base. Capillitium scanty, hyaline. Gleba color pale olivaceous. Spores globose, 4 mic. hyaline, very slightly rough. Only known from a specimen collected by Broome, Brisbane, Australia.

DIPLODERMA ALBA.—This is extremely doubtful. It departs from the idea of the genus in having a columella like some unopened Geasters. The type is very immature, the gleba not yet deliquesced. Spores globose, hyaline. We should consider it an unopened Geaster, but doubt if any Geaster, even immature, has hyaline spores. Naturally, it is known only from the type locality, "Cudgegong River, Australia."

EFFETE MATTER.

Diploderma fumosum, Cooke, Australia; Diploderma melasporum, Cooke, Australia; Diploderma Ungerii, Schulzer, Austria; Diploderma tuberosum, Link, Germany, are unopened geasters. Diploderma glaucum, Cooke, Australia, is Mesophellia arenaria. Diploderma sabulosum, Cooke, Australia, and Diploderma pachythrix are Mesophellias, close, if not the same as Mesophellia arenaria.

THE GENUS ARACHNION.

The receipt of a "giant" Arachnion from Miss A. V. Duthie, South Africa, has led us to a review of this curious genus.

The genus can be briefly described as being puff-balls within puff-balls. The entire interior of a ripe specimen is filled, not with dust (spores and capillitium), as most puff-balls, but with a granular substance that feels "gritty" when rubbed between the fingers. These granules are peridioles, little sacks containing spores. They are small, but can be seen under a hand-glass, and even with the naked eye. They are of the color, and appear as if the puff-ball were filled with ashes. The name Arachnion refers "to a spider sac filled with eggs."

The genus Arachnion has always a very thin peridium with a smooth cortex. It breaks irregularly, and is so fragile that it is difficult to keep entire ripe specimens in the herbarium. There is no sterile base. The gleba consists of little granular masses of spores called peridioles, which in the type species are each surrounded with an imperfect web of hyphae, analogous to the capillitium of other "puff-balls," and for convenience called capillitium. In Arachnion rufum, of Australia and in a form of Arachnion album from Brazil, the peridioles are almost devoid of hyphae, almost naked, little balls of spores. The spores are borne on slender sterigmata, which in some

specimens (not species, I think) are partially persistent as pedicels. Usually these pedicels are absorbed in the process of deliquescence, and it is not unusual to note spores in the same specimens with varying remains of the sterigmata.

HISTORY.—Up to last year the known species of Arachnion were really one species, originally named Arachnion album, by Schweinitz, who noted the peculiarities on which the genus rests. It is so small and rare that it is not often collected, but we receive it occasionally from the United States, West Indies, South America, Australia, and South Africa. One correspondent (Miss A. V. Duthie) reports it very common in South Africa (Note 191). In Europe it is known to this day from a single collection sent me in 1905 by Rev. L. Badet, from Salussola, Italy. Last year Miss Duthie added from South Africa a very peculiar species Arachnion Scleroderma (Myc. Notes, p. 538), and now sends a giant species, which was entirely unexpected in this genus of heretofore pigmy puff balls.

ARACHNION ALBUM (Fig. 917).—Peridium smooth, thin and fragile, never opening by a definite mouth, but breaking irregularly, pale in color, pure white when young. Gleba composed of little grains called peridioles, each consisting of a mass of spores surrounded by a few, loose, hyphae threads (capillitium). Spores smooth, globose, 5-6 mic., sometimes with fragments of the persistent sterigmata attached. Gleba

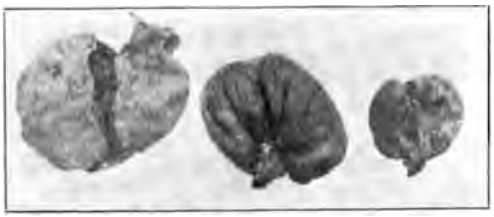


Fig. 917.

Fig. 918.

color in the type form ash gray. Our figure 917 is this plant, natural size. Fig. 918 a section enlarged about six diameters to show the nature of the peridioles.

We gave in Mycological Notes, page 253, the slight variations we have noted in this plant from different localities. They do not merit distinctive names, excepting perhaps as to the following.

Arachnion bovista (Chile), same exactly as Arachnion album, excepting the gleba is brown instead of ash gray.

Arachnion rufum (Australia, M. N., p. 254) is a more robust plant than Arachnion album with a thicker, reddish brown peridium and brown gleba. It is only known from one collection from D. McAlpine.

ARACHNION SCLERODERMA, FROM MISS A. V. DUTHIE, SOUTH AFRICA.—Peridium globose, 1-1½ cm. in diameter, with a strong, rooting base. Sterile base none. Peridium thin, with large, irregular warts on the order of the warts of Scleroderma aurantiacum. Gleba greenish olive. Peridioles irregular, both in size and shape, from globose to narrowly elongated, or obtusely triangular, 60-300 mic. in diameter. Spores globose, or slightly oval, smooth, mostly pedicellate, with slender pedicels; 6-20 mic. long.

In internal characters this is much like Arachnion album, but the peridium characters are so different that I at first took it for a Scleroderma. The only collection is from Miss A. V. Duthie, South Africa. (Cfr. Myc. Notes, page 538, where a figure of the plant is given.)

ARACHNION GIGANTEUM, FROM MISS A. V. DUTHIE, SOUTH AFRICA (Fig. 919).—Plant 5 to 7 cm. in diameter, globose, with a few mycelial roots. Peridium thin, fragile, smooth, dark fuliginous. Gleba ash gray, like grains of sand. Peridioles with rather firm walls, globose or oblong, 200 to 400 mic. in diameter. Spores globose, 8 mic. in diameter, smooth, very pale colored, without pedicels.

Fig. 919.

We have been so accustomed to consider Arachnion as our genus of smallest puff-balls that when we first saw this large specimen (Fig. 919, natural size) we did not believe it would prove to be an Arachnion. It was very fragile, and was largely broken up before we could photograph it. The specimen is from Miss A. V. Duthie, South Africa, and is the second species that she has added to the genus.

THE MESOPODIAL LASCHIAS.

The genus Laschia embraces the gelatinous, poroid species. Most of them are quite small, and sessile or pleuropodial. The mesopodial species are very few, only four being known as follows:

Fig. 920.

LASCHIA STAUDTII (Fig. 920).—Pure white, glabrous, gelatinous. Stipe 1-2 inches long, mesopodial, white, smooth. Pileus convex, smooth. Pores medium, shallow. Cystidia and crested cells none. Spores oblong, 4 x 6 mic. The collection sent by Dr. Cleland is the first made in Australia and the second known. A collection reached Hennings from Kamerun, Africa, and was named as above. It is preserved in alcohol at Berlin, and our photograph

is from the specimen in a jar. Dr. Cleland sent his specimens preserved in formalin, and they are exactly the same as the African collection. Illustration, Engler & Prantl, page 185, very good.

LASCHIA BAUMANNIANA.—Scantily known from the type in alcohol at Berlin. It came from Africa, and is recorded as yellow when fresh. It is same shape, but smaller and more slender than Staudtii. The microscopic features are not known.

LASCHIA CAESPITOSA, FROM DR. J. B. CLELAND, AUSTRALIA (Fig. 921).—Pileus conical, smooth, pale when dry, white (?) when fresh. Stipe slender, mesopodial, caespitose, and coalescent at base. Pores small, angular, very deep and long.

This seems to be a frequent species in Ceylon, Australia, New Caledonia, and New Pomerania, but unknown to me from other

Fig. 921.

Fig. 922.

Eastern countries. It is recorded from Philippines, but I have seen no specimens. Berkeley first got it from Ceylon and named it Favolus manipularis. At that time Berkeley's ideas of the genus Favolus was Laschia of the present day. Afterwards Berkeley modified his view of the genus, and when he received the plant some years later from Australia he called it Laschia caespitosa, a better name for it. In recent years it has been named Laschia gogolensis and Laschia Lauterbackii by Hennings, and Polyporus mycenoides by Patouillard. As it is unique in its long pores, differing in this respect from all other species, it should not have had so many names. It grows caespitose "50 or more" in a clump, it is said, on rotten logs. In general aspect it resembles an Omphalia. Our photograph (Fig. 921) is from the type at Kew, and also (Fig. 922) a section through a pileus (somewhat enlarged) of a specimen sent by Dr. Cleland.

LASCHIA GRACILIS (Fig. 923).—Pileus thin, subgelatinous, pale. Pores minute, white, gelatinous. Stipe mesopodial, slender, smooth, reddish when dry. Cystidia none. Spores (P.) globose, 5 mic. apiculate, hyaline, smooth.

This seems to be the only mesopodial Laschia in the American tropics. It was named Polyporus gracilis by Klotzsch years ago, and as such appears in our Stipitate Polyporoids. Patouillard published it as Laschia clypeata, and only recently Murrill discovered it to be a "new species," and called it Polyporus Cowellii. It is not rare in the American tropics. Rick has collected and distributed it. His specimens show some variations in size of pores, some being larger pored than others.

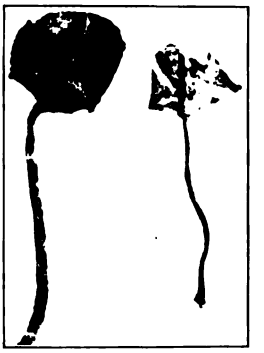


Fig 923.

LASCHIA (?) SILVESTRIS. Holterman from Java gives a figure that is probably a Laschia, and probably Laschia caespitosa, but he discovers it to be a "new genus," "Van Romburghia," and does not give the essential fact, the nature of the tissue, to decide whether it belongs to Laschia or not. From his imperfect record the classification of the plant is only a guess, but from his figure the plant is probably Laschia caespitosa.

THE EMBRYOLOGY OF LYSURUS MOKUSIN

Phalloids could be divided into two families or "natural orders" on the attachment of the young plant to the volva. We considered this in detail in Myc. Notes, page 512, in connection with young Lysurus Gardneri (there called Lysurus borealis). We have received from L. C. C. Krieger some preserved eggs of Lysurus Mokusin, an introduced phalloid that occurs in the hot houses at Chico, Cal. (Cfr. Myc. Notes, page 586). We present a figure (924) enlarged, of a transverse section through an egg, showing the gleba entirely surrounding the arms, excepting, of course, when the arms are joined to the volva by the umbilical plate. As the embryonic structure of Lysurus Mokusin is exactly the same as that of Lysurus Gardneri, considered in detail in Mycological Notes, page 512, we will not enlarge on it here. A figure purporting to be a section through an egg of Lysurus Mokusin was given in Jour. de Bot., 1890, page 257, but it impresses me as having been an inaccurate conception and presentation of the subject.

Fig. 924.

There are a number of phalloids whose relations are not known. We would be most glad to receive the eggs of the following genera: Aseroe, Anthurus, Pseudocolus, Colus, and Kalchbrenneri. These five are the only genera in which the embryonic relations are not known, at least by analogy. We infer that the last three will be

found to belong to the clathroid alliance, but the relations of Aseroe and Anthurus are in doubt. It is a simple matter to send phalloid eggs so as to reach me fresh. Pack them in cotton, moistened with formalin, in a glass tube or wide mouthed bottle. I hope those who reside in countries where these phalloids grow, particularly my Australian and South African correspondents, will bear this in mind when they find the eggs.

NOTES ON THE XYLARIAS.

We shall be very glad to receive from any correspondents, particularly from tropical countries, specimens of Xylarias. We have done considerable work on the genus, and have photographs of all the historical specimens we noted in the various museums of Europe. Xylarias will be found abundantly in every locality, usually growing on rotten logs.

Fig. 925

Fig. 926.

Xylaria grammica (Fig. 925). This seems to be a characteristic species, readily known by its striate, greyish black surface. The stipe (2-4 cm. x 3-4 mm.) is black, smooth. Each bears one or usually two clubs (5-8 cm. x 8-10 mm.), usually obtuse, cylindrical. The surface is a thin, dark greyish crust with black lines. Internally, there is a fuliginous stroma (3-4 mm. thick), pithy in the center and finally hollow. In drying the clubs often contract and split. The perithecia are globose, black, arranged in lines. Spores 6 x 12.

Xylaria grammica, originally from South America, is said to be very common. It is recorded from West Indies, Australia, and Africa. We are not assured that the Eastern plant is the same as the American. Our African collection, Xylaria variabilis (cfr. Myc. Notes, page 636), is young. The clubs are more slender, striations not nearly so prominent, and the "bark" is loose and separates from the stroma, which it does not do in the American plant. This African plant is also called Xylaria torquescens. The Australian plant we

do not know, but it was first called Xylaria ectogramma by Berkeley and afterward referred to grammica. Xylaria exalbata, from Ceylon, referred to grammica as a synonym, from our photograph, seems quite different. We present (Fig. 925) a photograph of this characteristic species from specimen received from Dr. J. Dutra, Brazil. Also an enlargement (Fig. 926) to show the nature of the striations.

SPECIMENS.—We have fine collections from Brazil: Rev. Rick (310), Rev. Torrend (394), and Dr. J. Dutra. Also from Angola, Africa. J. Gossweiler, young specimen of Xylaria variabilis.

RELATED SPECIES.

XYLARIA VARIABILIS (cfr. Myc. Notes, page 636).—This is quite close to grammica, perhaps same species. The clubs are more slender, the lines not so prominent, the "bark" separable from the stroma, and on comparison they seem different, though on basis of our immature collection, no just estimate can be made. We have specimens from J. Gossweiler, Angola, Africa.

XYLARIA ZELANDICA, from New Zealand (not Xylaria Zeylanica from Ceylon), is a small species with a slender stipe; said to have large, fusiform spores 10 x 32-35. The figure shows similar lines on the club, but we can not make them out on our photograph of the type.

XYLARIA STRIATA, from China is figured as being about same stature as Xylaria grammica and having similar lines. The clubs are more acute, stems thicker, and spores 5-8 x 15-20. Our photograph of the type, however, does not agree with the published figure by any means.

Fig. 927.

Fig. 928.

XYLARIA GUYANENSIS (Fig. 927).—Clubs 3-4 cm. x 6-7 mm., with short stipe 1-1½ cm. x 4 mm., solid, with white stroma, disposed to become hollow in the center when old. When young, covered with a thin, black crust; when old, smooth, even. Perithecia regular, rather distant, immersed in the stroma. Ostioles surrounded by a white disk. Spores 4-5 x 8-12.

The peculiarity of this species, the white ring around the ostiole, was noted by Montagne. The perithecia are also more distant and regular than in most species, and at first the mouths are papillate, viz., covered with a thin crust. The white ring does not show until the crust peels off. We are indebted to Dr. Brenckle for examination

of the specimen that we photograph. Our enlargement (Fig. 928) shows the white ring around the ostioles.

SYNONYMS.—This plant was distributed by Theissen as Xylaria Hypoxylon var. tropica, but it does not seem to be published under this name. It is too obese for X. Hypoxylon, besides, I think the white rings are characteristic of a species. Xylaria exalbata, Ceylon, Berkeley, is surely the same plant, and is marked in same way as noted by Berkeley. Xylaria Neilgherries, a mss. name at Kew, is also same species.

RARE SPECIES OF FUNGI RECEIVED FROM CORRESPONDENTS

CALVATIA CRETACEA, FROM PROF. JOHN DEARNESS, CANADA (Fig. 929).—Plant globose, 2-3 inches in diameter. Sometimes with a short, rooting, sterile base. Cortex a thick, furfuraceous coat, which breaks into pyramidal warts and finally largely disappears. In some specimens the cortex is much less developed than shown in our photograph. Peridium breaking irregularly in dehiscence. Gleba dark, purplish brown. Spores globose, 5-7 mic., apiculate, distinctly rough, with small, echinulate points. Capillitium rigid, interwoven, threads 5-12 mic. in diameter, mostly 8-10, usually broken in short pieces, deep colored.

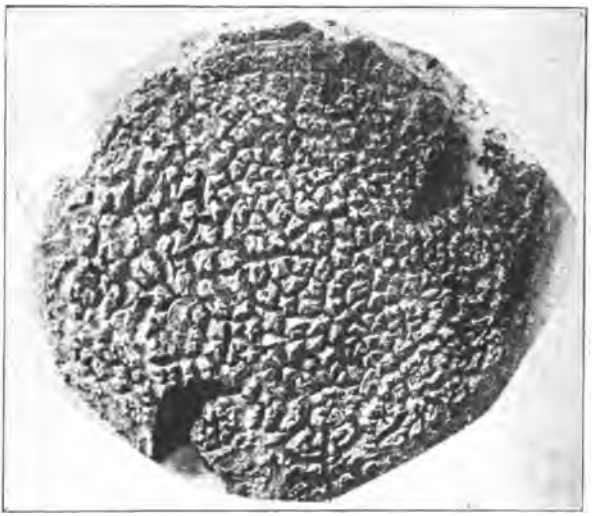


Fig. 929.

This is a peculiar *arctic* species, only known from extreme northern regions. It first reached Berkeley, collected by Captain Feilden, on Bellot Island, August 14, 1876. Bellot Island is up near the North Pole somewhere. Berkeley named it Lycoperdon cretaceum, and published it in his usually imperfect way (1878) in his account of the fungi of the Arctic expedition. It is the only collection at Kew, and as will be seen from our photograph (Fig. 929), is in good condition. We fail to see any application of Berkeley's name and are much tempted to use the later and better name.

In 1914 I received fine specimens of the plant from Thore C. E. Fries, collected in Lapland, where it is said to be very common in the mountains. Mr. Fries sent it under the name "Calvatia borealis, n. s.," which I advised him was correct (cfr. Letter No. 49), as I had overlooked the specimen at Kew. I do not know that he ever published it. The several specimens from Mr. Fries showed marked difference in the cortex, the warts of some specimens of same collection being much smaller. Also the sterile base though scanty, is evident in some and absent in others. In 1910 there was published and figured in the Fungi of Denmark Expedition to Greenland, under the name Calvatia arctica, a plant that, from the description, is doubtless the same species. I have never seen the figure. It was collected in East Greenland, Lat. 77 degrees. The main description accords, though there are a few discrepancies from the plant as I know it, viz., "Spores yellowish. Capillitium rarely 7½ mic. in diameter." We believe it will prove to be the same plant, described from not fully matured specimens.

The specimens from Prof. Dearness were collected at Kay Point in the Arctics, August, 1914. It is the fourth collection known.

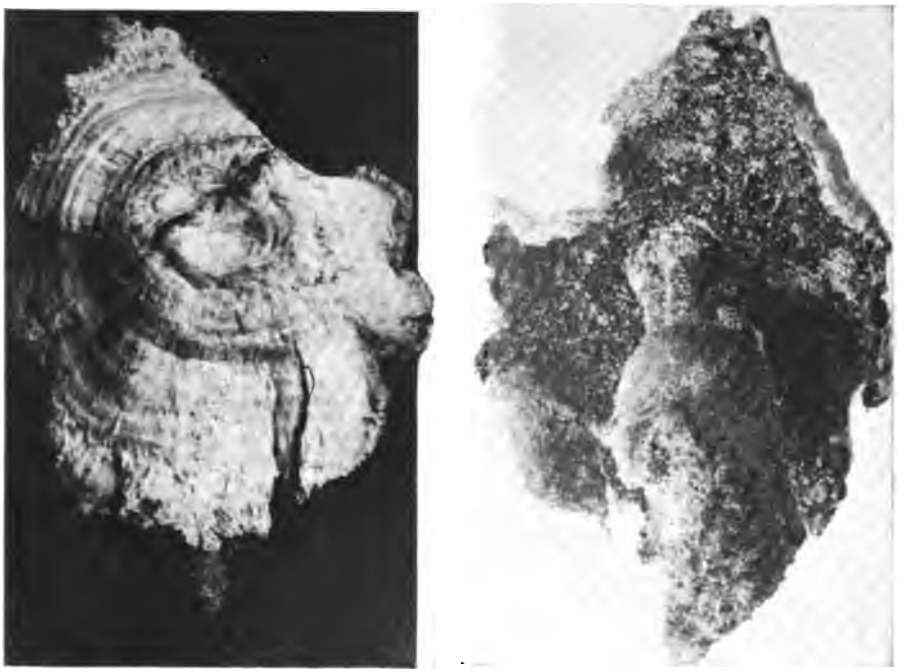


Fig. 930.
Polystictus arenicola.

POLYSTICTUS ARENICOLA, FROM CHAS. H. BAKER, FLORIDA (Fig. 930).—Pileus 6-8 cm., broad, surface snow white,

as if whitewashed, faintly zonate, with raised zones, context very thin, ferruginous. Pores small to medium, ½ cm. long, with ferruginous tissue and mouths. Stipe mesopodial, ferruginous, short, two to three cm. long, abruptly bulbose at base. Setae none. Spores (Fig. 931) abundant, narrowly oblong, 4 x 12 mic., very pale colored, smooth.

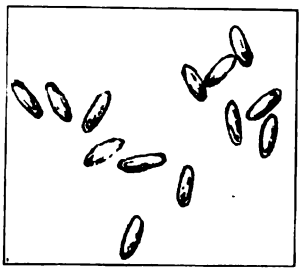


Fig. 931.

This plant grows in the sand. It is very striking in the strong contrast of the snow white surface and ferruginous context. At first I considered the possibility of its being decolored specimens of some other species, for we know that the related Polystictus perennis often has a decolored surface, due to age and exposure to light. But no other similar species has same spores. Polystictus Montagnei, which is the closest and agrees in tissue, color, and general stature, has spores 7 x 10, much broader, and differs essentially in shape. We would class the plant in Section 17a of our Stipitate Polyporoid pamphlet, and were we rewriting it we would remove Polystictus Montagnei to same section.

The plant could be named dealbatus most appropriately, but unfortunately the name is occupied by a species not very suitable to the name. There is now a Polystictus arenicolor, and some one may wish to change this on that account. However, "sand dwelling" and "sand color" are entirely different ideas, and it is not practical to select names in all cases "fool-proof," so we will let it go.

Mr. Baker is fortunate in finding this novelty, for unnamed Polyporoids (excepting Porias) are rare nowadays in the United States.

POLYPORUS GLOBOCEPHALUS, FROM REV. TORREND, BRAZIL (Fig. 932).—Pileus hemispherical, about 1 cm. broad, fleshy, white. Surface smooth. Flesh soft, white. Stem mesopodial, black below, white above. Pores minute, decurrent on the stem. Cystidia none.

Fig. 932.

This is the first Melanopus I have seen with hemispherical head. I would class it in Section 49, though it differs from all others in this section. On account of the soft flesh, it might go in Section 44 of Ovinus, but these little plants would not be sought in Ovinus. Rev. Torrend sends a specimen in formalin, from which our photograph and description are drawn. It would not be possible to give a description from the dried specimen.

MYCOLOGICAL NOTES.

BY C. G. LLOYD.

No. 47.

CINCINNATI, O. APRIL, 1917.

PROFESSOR EDWARD ANGUS BURT.

MYCOLOGICAL NOTES

Issued by C. G. LLOYD.

224 West Court Street. - - CINCINNATI, OHIO.

SUBSCRIPTION PRICE.—A little personal interest on the part of the recipient in picking up and sending to my address, specimens of the larger fungi. All are desired excepting specimens of fleshy Agarics. Simply dry the specimens and send them in.

PROFESSOR EDWARD ANGUS BURT.

We hold Prof. Burt to be one of the few really earnest, scholarly men at work on American mycology. To his specialty, the Thelephoraceae, he has given years of careful and close study. The Thelephoraceae, particularly the resupinate species, demand the most patient application and labor. The recent use of the microscope in this field has made of it a new world. The old workers, with scant material and superficial examinations and their obsessions for "new species," made a mess of it. Not a quarter of the species were named, and of those named, few could be identified. Our species are no doubt mostly the same as those in Europe, but no one had any way of knowing what those in Europe are, much less those of this country.

Fifteen or perhaps twenty years ago, Prof. Burt spent a season in Europe, studying such specimens as he collected, or found at Kew or Upsala. It is to be regretted that he did not go to Leiden, the home of Persoon's specimens, where are to be found the "real" types of many of these species. I have not much sympathy with the idea, now "legal," of starting with Fries, particularly in the cases where he did not get Persoon's species right, and there are many cases of this kind among the resupinates.

Prof. Burt has been slow in publishing, and it is only in the last two or three years that we have had much benefit from his studies. We trust that his work will not be interrupted, until finished. In our opinion, the resupinates will never be a very popular study, as long as they involve as much work as at present, sectioning each specimen. We think the study can be made more practical, but that is for the future.

Prof. Burt and Bresadola are, we believe, the only two con-

scientious "priorists" living. This very quality, indeed, has led Bresadola into many illogical conclusions as to the names he uses, and judging from Burt's troubles with "Septobasidium pedicellatum," he will meet the same difficulty. "Use," in my opinion, not "priority" alone, is the natural law of all languages, and the man who holds to the contrary is in the same position as the man who would refuse to employ the word "December," because it is not now the tenth month.

Prof. Burt is a very careful, safe, conservative man, a thorough scholar, a patient worker, a graduate of the best mycological college in our country (Harvard), and he is working on the most difficult problem existing in connection with American mycology. We have always felt it to be most fortunate that a man of his character became interested in this work, for he will undoubtedly place it on a safe and permanent basis. And he is not only the first, but he is the only man who knows, or for that matter, has ever known, anything about resupinate Thelephoraceae in this country.

POLYPORUS ANCEPS, FROM JAMES R. WEIR, MONTANA (Fig. 933). We take this in the sense as named by Mr. Weir, for with him it is a common plant on hemlock, and I have never been able to decide a name for it. This is a white, hard plant with a "reddish tendency" (section 84). I have always doubted it being anceps, for I noted no "reddish" change on the type. But as it grows on hemlock, and answers well the description, I think it best to take Peck's name in the sense of Weir. The most prominent character is the way it affects the host, the peculiar "rot" shown in our figure 934. We gave in Note 499 a synopsis of the similar and related species, but they are very puzzling and as yet are not all straightened out.

Fig. 933.

Fig. 934.

CYTIDIA CORNEA, FROM MISS A. V. DUTHIE, SOUTH AFRICA (Figs. 935 and 936). Dried plant discoid with recurved margin, 8-10 mm. in diameter, pale flesh color. Tissue hard, horny,

Fig. 935.

Fig. 936

cuts with difficulty. When soaked it is pure white, firm, with smooth, shiny hymenium on upper surface only. Context white, firm. Basidia clavate, hyaline, with long sterigmata. Spores globose, large, 14-16 mic., pale yellowish tint, surface uneven. Context hyphae hyaline, slender, similar to the hyphae of a Tremella. Cystidia crested.

Fig. 937.

It is customary nowadays to refer to Aleurodiscus all Thelephoraceae with large spores and basidia. This is not a Thelephora in fact. It is neither cartilaginous nor fleshy, but subgelatinous with such firm texture that gelatinous does not express it, but it swells on absorbing moisture, and the hyphae are same nature as gelatinous plants.

It is quite embarrassing to refer this plant to any established genus. It lies between Cytidia and Aleurodiscus. The hymenial structure is of the latter, the gelatinous tissue that of the former. It is neither in fact. I was inclined towards Aleurodiscus, but I sent the plant to Rev. Bourdot, and he decides on Cytidia. To include it in either genus, the limitation of the genus must be stretched. Our figure 935 represents the dried specimen as received from Miss Duthie. Figure 936 is same after it is soaked out. We present a figure (937), kindly prepared by Rev. Bourdot, to show its hymenial character. It will be noted that it has the large spores, basidia and crested cystidia of Aleurodiscus. Crested cystidia are chiefly known in Aleurodiscus. They are called "dendrophysen" by the Germans, "hyphes paraphysoïdes" by the French.

POLYPORUS (AMAUR.) INFULGENS, FROM REV. C. TORREND, BRAZIL (Fig. 938). Pileus with a dull surface, color of applanatus. Stipe pleuropodial, concolorous. Context pale.

Fig. 938. Fig. 939.

Fig. 938, Polyporus infulgens. Fig. 939, Polyporus dorsalis.

Pores minute, round, with white mouths. Spores globose, strongly rough, reticulate, 10 mic.

We were at first disposed to refer this to Polyporus subrenatus, named from a single specimen from British Honduras which has the same spores. On a recent visit to New York we compared them and they are not possibly the same. The leading features, however, the dull, non-laccate surface, the pale context, and particularly the globose, reticulate, strongly rough spores which are exceptional in this group of plants, are the same. These peculiar spores only found in one other related species, are not mentioned in the original "description" of Polyporus subrenatus. Both species belong in Section 6a (Amaurodermus) of our Stipitate Polyporoids.

POLYPORUS (GAN.) DORSALIS, FROM REV. J. RICK, BRAZIL (Fig. 939). This corresponds to Pol. lucidus, excepting in the stipe insertion which is dorsally attached. Pol. lucidus never has a stipe attachment like this. As lucidus, it is a "light weight" species. Polyporus fornicatus has the same shape and attachment exactly (cfr. Stip. Pol. fig. 398), but is a "heavy" species, that is, it has minute, heavy, hard pores, and belongs to a section corresponding to "Ponderosus" in our Fomes pamphlet (section 74, page 269). On form alone, both are same, but in nature of pores they are quite different. The stipe is much longer than our figure, which is taken to show the stipe attachment.

While our figure of Polyporus dorsalis (939) has a close resemblance to the figure of Polyporus infulgens (938), they are quite different plants. Polyporus dorsalis belongs to Section Ganodermus with strong laccate surface and truncated spores. Polyporus infulgens belongs to Section Amaurodermus with dull surface and globose spores. Polyporus dorsalis is probably best held as a form of Polyporus lucidus, but I believe the stipe attachment is of more importance than most characters on which species are based.

GUEPINIA PEZIZAEFORMIS, FROM J. B. CLELAND, AUSTRALIA (Figs. 940 to 942). We are very much pleased to receive this little species from Dr. Cleland. It is the first we have

Fig. 940.

Fig. 941.

gotten. It is scantily represented at Kew, also a collection from Australia at Berlin. It is not known from any other country. Guepinia pezizaeformis is not well named, for it is not pezizaeform. The dried specimens curl up and Berkeley may have carelessly taken them for little cups, but they are not. They are about same form

as the little Polyporus pusillus (Rhipidium) attached by a lateral point, and the hymenium on the under side. The color described as "red" is yellow or perhaps orange yellow, with far more yellow than red. It is a typical Guepinia with the hymenium inferior, furcate basidia, and hyaline unilateral spores, 6 x 12-14, guttulate, and probably septate in germination. The color resides in a cortical, palisade layer of cells, quite distinct from the hyaline tissue of the plant. I do not recall any other tremellaceous plant with a similar, distinct, cortical layer of bright colored cells. Cooke's figure (96) in the Handbook has no resemblance however remote to either size or shape of plant. He no doubt drew it from his imagination, drawing his picture to suit the name. Our figure 940 represents the dried plant, natural size; 941, a single specimen soaked out and enlarged; and 942 several specimens partially soaked. The little plants curl up and roll inward in drying, and only take the flattened form after prolonged soaking.

Fig. 942.

FAVOLUS EUROPAEUS (?), FROM J. E. A. LEWIS, JAPAN. (Fig. 943.) It has always appeared to me strange that I have never gotten Favolus from Japan, and the genus is not recorded from Japan. It is a common genus with us, and not rare in the alpine regions of Europe. Favolus europaeus was considered and illustrated on page 18 of our Polyporoid issue. We have over a hundred collections of it from the United States. When fresh it is of a bright color, with a thin cuticle, which peels off as it gets old, and then the plant becomes white. This specimen from Mr. Lewis is white, with no evidence of ever having had a colored cuticle. Of course, I cannot state that it ever had a colored cuticle, but I assume that it did, in which case it is Favolus europaeus. If it were always white then it is unnamed I think. As to shape, texture, pores, it is the same as we sometimes find Favolus europaeus here. I hope our Japanese correspondents will watch out particularly for Favolus. I believe that Favolus europaeus must grow in Japan for it is common with us in America and occurs in Europe. It cannot be mistaken from our photograph of the pores. Just a few days ago, I received from M. Gono, Japan, a specimen of Favolus, which was so badly eaten I could not venture as to its species, but it was not Favolus europaeus.

Fig. 943.

Fig. 944.

POLYPORUS MOLLERIANUS, FROM J. E. A. LEWIS, JAPAN (Fig. 944). This is the stipitate form of Polyporus vinosus, same exactly as to color, context, pores, etc., but spathulate and stipitate (cfr. Apus Pol., page 342). Originally it was from Africa, and we have heretofore only seen African specimens. It is a new record in Japan. We have previously gotten, however, the usual form of Polyporus vinosus from A. Yasuda, Japan.

ISARIA, FROM J. E. A. LEWIS, JAPAN (Fig. 945). On Melolontha Japonica, as named by Mr. Lewis. Not many of the Isarias have specific names, and they should not have, for most if not all of them are preliminary stages of a Cordyceps. There are good grounds to suspect when one finds an Isaria on an insect, that the same host develops a Cordyceps. We know of no Cordyceps on Melolontha in Japan. We have in the United States a Cordyceps called Cordyceps Melolonthae, and it is our largest species. With us this is developed from the larva, not the perfect insect. We hope our Japanese correspondent will specially watch for a Cordyceps on Melolontha.

Fig. 945.

Fig. 946.

STEREUM ELEGANS IN JAPAN. FROM J. E. A. LEWIS, (Fig. 946). This specimen is so much more rigid and firm that we are very much in doubt as to the reference. Also it seems to grow from the earth laterally, not with a central root as illustrated on page 598, Mycological Notes. Also the pileoli are not as distinctly stalked as usual.

Stereum elegans, that had not crystallized into anything definite until we wrote our Stereum pamphlet, proves to be a frequent species in the East. It was originally from Surinam. We have specimens as follows:

Australia, 14; India, 1; Ceylon, 3; West Indies, 3; South America, 2. We have also a small but typical collection from A. Yasuda, Japan (Fig. 947). While the plant from Mr. Lewis is different from the usual plant, it will probably prove in time to be due to conditions of growth.

Fig. 947.

POLYPORUS VOLVATUS, FROM J. E. A. LEWIS, JAPAN (Fig. 948).—A fine collection. Forty years ago Peck named this unique thing, although it is common now in sections of the United States, and a number are in our museum. It is also found in China and Japan. We have it from Prof. A. Yasuda, Japan. By comparing the photograph of the Japanese specimen (Fig. 948), sent by Mr. Lewis, with our photographs of the American plant (Myc. Notes, Polyp. Issue, page 25) it will be noted that they are absolutely the same in every respect. It should open the eyes of those who look upon fungi as "local" and mostly "new species" when a species as unique as this occurs in the United States, Japan, and China. Other wise it is not known in any country. A full account of the plant was given in our Polyporoid Issue, No. 2, page 25.

Fig. 948.

CANTHARELLUS PALLIDUS, FROM A. YASUDA, JAPAN (Fig. 949).—Pleuropodial, fleshy, spathulate, or lobed, thick, with obtuse gills. Color described when fresh, very pale, almost white. Specimens now discolored. Spores 4 x 8 mic., hyaline, smooth.

Two specimens were received. One was lobed, as shown in our photograph, the other slender, and but little enlarged above, resembling in a general way Clavaria pistillaris. Our figure made from a dried specimen soaked out of course does not give a correct presentation of the plant such as a photograph of a fresh specimen would.

Fig. 949.

Pleuropodial Cantharelli are very rare. This is the first we have ever gotten. Eight are listed in Saccardo. Three in Europe, all unknown to me except from illustrations, and no possibility of being this plant. Berkeley named a Cantharellus flabellatus from Japan, but as he described it as having narrow gills, and thin, it is prob-

ably not this species, which is thick, fleshy, and has obtuse gills. I never looked up the type. The two American species by Schweinitz, one, C. viridis is unknown from any specimen, and from description is probably not a Cantharellus; the other, C. olivaceus, is a Paxillus. The last species in Saccardo Cantharellus ramealis, from Java, is a Guepinia. In addition, there is a species of pleuropodial Cantharellus, which has been named as Craterellus as follows:

CANTHARELLUS PARTITUS. This is a thin, small plant about a cm. growing on wood. It is only known from an old type, at Kew from "New Ireland." It is black now, probably discolored in drying. I believe it to be misnamed "partitus" for it is not parted. It has never been recognized since named and probably never will be.

"TREMELLA" MYCETOPHILA, FROM S. H. BURNHAM, NEW YORK (Fig. 950).—This is really a fungus without a name. It is not rare, always found on Collybia dryophila. Peck called it Tremella mycetophila, but it is only a Tremella in general resemblance. The texture is not tremellose and it has the ordinary clavate basidia in both characters entirely foreign to a Tremella. Burt in 1901 proposed to put it in the genus Exobasidium, although about as different from the other species of Exobasidium as it is from a Tremella. In his latest writings Burt excludes it from Exobasidium as he now considers it "a teratological production of Collybia dryophila induced by protracted wet weather during development of the frutification." Hence he leaves it without a name at all. We do not claim to know anything about what it really is. We only know it is not rare in this country and that it does not occur in Europe, and that Collybia dryophila as well as "wet weather" are both common in Europe. It looks like the same conditions would produce the same efiect on the same plant in both countries.

Fig. 950.

Daisy M. Hone had an extended article on this plant in 1909. She found it forming large masses on the pileus and stems of the Collybia. She considers it "a true parasite." If Burt's theory is correct, it is an exceptional case. We have sometimes noted evident teratological development of Agarics forming abortive pilei on top of the normal pileus like the celebrated Poria agaricicola that a German savant discovered on Amanita (cfr. Myc. Notes, page 459). But we think there is no other case where an Agaric habitually develops an entirely different and constant fruiting form, in addition to the normal gills.

POLYPORUS LUCIDUS (ABNORMAL), FROM JAMES R. WEIR, MONTANA (Fig. 951).—We present a figure of this ab-

Fig. 951.

Polyporus lucidus (abnormal)

normal specimen of Polyporus lucidus from a photograph sent by Mr. Weir. It shows what a strange shape a plant will take under some abnormal conditions. Of course our figure shows only the shape, for the specimen was many times larger, measuring more than a foot and a half long.

Fig. 952.

Strobilomyces pallescens.
(Top of pileus.)

STROBILOMYCES PALLESCENS, FROM REV. J. WILSON, AUSTRALIA (Fig. 952).—This is evidently the most frequent Strobilomyces in Australia, and the only species known from other than the "type locality." It is a very characteristic plant and will readily be known from our photograph of the top of the pileus showing the peculiar scales. The plant has elongated spores, hence not a Strobilomyces in the original sense, but the subject was fully covered in our note No. 82. In the United States we have but one common species, Strobilomyces strobilaceus, and in Australia the common species is Strobilomyces pallescens. It is curious, however, that in the United States, there is but one collection known of the common Australian plant (cfr. Note 322 when carelessly published as Strobilomyces pallidus).

COLUS HIRNUDINOSUS (?), FROM J. B. CLELAND, AUSTRALIA (Fig. 953).—This may be Colus hirnudinosus, but there is some doubt. Cooke gives it in the Handbook, and a good figure (for he copied from Montagne). There is no specimen on which to base it at Kew. From this dried specimen it does not seem as clathroid as Colus hirnudinosus, but I believe it is the same thing. I should like very much to have a photograph of this Australian plant made from fresh specimens. If it prove that Colus hirnudinosus does occur in Australia, it is of great interest, for at present it is only known from the Mediterranean region.

Fig. 953.

POLYSTICTUS BRUNEO-LEUCUS, FROM J. B. CLELAND, AUSTRALIA (Fig. 954).—This is the first specimen I have ever gotten, and the only other collection known to me is the type at Kew. We present a photograph of the type (Fig. 954). It was from Tasmania. The character is the thin, rigid, glabrous brown pileus and usually the contrast of the white (or greyish) pores. This contrast, however, is not shown in this specimen, which appears to be old and discolored. Polyporus bruneo-leucus has notably larger pores, but otherwise exactly the same as Polystictus planus (cfr. Note 358), a rare plant of the United States and Europe. I have a feeling that they are the same thing, merely geographical pore variations, but until the small pored plant comes from Australasia we would maintain both names. Polyporus bruneo-leucus was published by Berkeley in 1845. Fries lists it in Nov. Symb. 1851, as bruneo-albus, either a slip of the pen or an unwarranted change. Saccardo compiles it under Fries' name, though what reason Fries had to change it, if done intentionally, I do not know.

Fig. 954.

STEREUM ZONARIUM, FROM J. B. CLELAND, AUSTRALIA (Fig. 955).—Pileus sessile to a reduced base, thin, rigid. Surface smooth, reddish brown (Brussels Brown Ridgway), with

Fig. 955.

narrow, strong, darker zones. Context tissue brown. Hymenial layer white, distinct from the context layer, and often but partially developed over the surface. Basidia clavate, forming a palisade layer. Cystidia none. Spores 3 x 5, hyaline, smooth.

Stereum with smooth pilei are very rare. In fact, we know but one other well authenticated, viz., Stereum versicolor, in its true sense. (Cfr. Note 53, Letter 44, and Note 159, Letter 53.)

STEREUM INSOLITUM, FROM FRANK T. McFARLAND, KENTUCKY (Fig. 956).—Pileus ungulate, spathulate, with a short stipe rooting in the ground. Surface pale, gray, striate. Hymenium dark, cinereous. Cystidia none. Spores globose, 4-5 mic., smooth, hyaline.

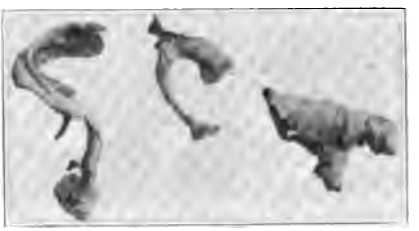


Fig. 956.

We have two species, Stereum Sowerbyi and Stereum Burtianum, both rare, and both close to this, though usually mesopodial and also differ in the color of the hymenium. The adustus hymenium suggests a Thelephora at first, in fact the plant in general appearance is much like Thelephora multipartita. It must be very rare, for never before sent to me. I would enter it in section 9 of my Stipitate Stereums.

Fig. 957.

FAVOLUS SQUAMIGER, FROM REV. J. WILSON, AUSTRALIA (Figs. 957 and 958).—We doubt very much if this is the same as Berkeley named, but it is better to give an old indefinite name a meaning than to propose a new name. Favolus squamiger is known only from the old type at Kew, a mesopodial specimen, and is probably only arcularius. However, the name is very applicable to this plant, and as it is very close to arcularius, it

Fig. 958.

seems well to so apply it. This specimen is pleuropodial, with exactly same pores as arcularius, and with little fasciculate squamules on the pileus. It is evidently a rare thing. The spores about 3 x 6, a little smaller than arcularius. It is a true Favolus for me, and so is arcularius in reality, although classed as Polyporus.

LENTINUS TUBER-REGIUM, FROM J. B. CLELAND, AUSTRALIA (Fig. 959).—We do not adopt Berkeley's name Lentinus Cyathus for the Australian plant, for, as will be developed later, we doubt if there is more than one species of Lentinus which develops from a sclerotium, and in that case it will take the older and better known name Lentinus Tuber-regium. Our photograph (Fig. 959) tells the whole story, and there is no need to describe it. In the original description Berkeley makes no mention of the sclerotium, merely referring to the "rooting base," though, if our memory serves us right, the sclerotium is preserved on the same sheet at Kew. There have been six species of Lentinus described that have sclerotia, viz., Lentinus Tuber-regium. Amboy Rumphius (1750); Lentinus Cyathus, Berkeley, Australia (1879); Lentinus scleroticola Samoa, Murray, 1886; Lentinus flavidus Africa, Massee, 1901; Lentinus Woermanni Cohn Africa, 1891; and Lentinus radicosus, New Caledonia, Patouillard, 1902. In our opinion, they are all the same. Ramsbottom (1913) holds that there are three valid species, viz., Tuber-regium, Cyathus and scleroticola, stating that they "are quite distinct from one another," but what the difference is he does not state and we do not know. We have specimens in our museum from Africa, Australia, and Samoa of this plant, and on comparison there is no material difference. There may be some difference in the sclerotia. We cannot say, as we have only a sclerotium from Samoa, but we doubt it.

Many years ago (1750) before plants had specific names, Rumphius published a crude figure from the East Indies showing six agarics growing on what seems a piece of earth, but which Rumphius says is a tuber. The plants he calls "Boleti," the tuber "Tuber-regium," as he probably thought they were different, though he states that the "tuber" produces the "boleti." Fries named Rumphius' figure Lentinus Tuber-regium, although Fries never saw a specimen. The plant seems fairly common in Africa, Australia, and Pacific Islands, but no specimen reached Europe for more than a century. Berkeley got it from Australia (1879), together with a tuber, if we mistake not, but if we are correct in our memory, he overlooked the little matter of it having a sclerotium. Hennings got it from Africa, and good specimens are at Berlin. Hennings failed to discover it was a "new species," which is strange but true. I also remember seeing fine collections at Leiden. I have no notes, but I believe they were from Java. The other specimens (mostly) that I have seen, viz., at museum at Paris named by Patouillard, British Museum named by Murray, Kew named by Massee, Germany named by Cohn, I think are all the same, although each author "discovered" something "new" about them, if nothing else a "new" name.

Fig. 959.

Lentinus Tuber-regium.

The original crude figure shows six specimens from the tuber, and on the fine figure recently published by Ramsbottom, there are eight. We found the plant several times in Samoa, mostly with a single fruit from each sclerotium, in one instance two. We had an idea that this was the difference between the Samoan plant, and Tuber regium, but all the specimens we have noted in the museums have one, or at the most, two fruits, and we believe the several fruits from one sclerotium is an unusual development. Our photograph, made from a specimen at Kew from Africa, shows one fruit and young ones just starting.

SARCOXYLON LE RATI, FROM J. B. CLELAND, AUSTRALIA. (Fig. 952.) This grew from an underground tuber and was named Squamotubera Le Rati by Hennings (in 1903) from New Caledonia. It is very similar in several respects to the more frequent Sarcoxylon compunctum originally from Java, but which also occurs in Australia and was well figured in Cooke's Handbook (fig. 196). I found the latter abundantly in Samoa, growing on fallen tree trunks, particularly where they had lodged off the ground and were not much decayed. Sarcoxylon Le Rati is a rare plant, heretofore only known from New Caledonia. Patouillard got it also from New Caledonia and considersd it a "transformation" of Sarcoxylon compunctum. Surely that is wrong. Plants that normally are globose and grow usually pendant from tree trunks, do not "transform" into cylindrical club shape plants growing erect from sclerotia buried in the ground. I hope Dr. Cleland will send me some of the sclerotia and also more mature specimens for the specimens sent are the conidial state and very immature.

Fig. 960.

In Cooke's Handbook, page 287 is a short account of "Xylaria gigas?" growing on "stumps &c." New South Wales. It has been omitted in Saccardo. Possibly it is Sarcoxylon Le Rati but until more is known about it and its habits nothing can be decided.

Cooke made his usual bull as to the genus Sarcoxylon which he proposed, and described the perithecia as membranaceous. They are carbonous and the genus is close to Xylaria. Indeed since Junghuhn (1838) figured the curious "Sphaeria compuncta" from Java there has been constant discord as to its generic classification. Montagne and Fries put it in Hypoxylon, Berkeley in Xylaria, and Saccardo in Penzigia. I think it is further from Penzigia in the type idea than from either of the others.

MYCOLOGICAL NOTES.

BY C. G. LLOYD.

No. 48.

CINCINNATI, O. JUNE, 1917.

DR. J. BARTON CLELAND.

MYCOLOGICAL NOTES

Issued by C. G. LLOYD.

224 West Court Street. - - CINCINNATI, OHIO.

SUBSCRIPTION PRICE.—A little personal interest on the part of the recipient in picking up and sending to my address, specimens of the larger fungi. All are desired excepting specimens of fleshy Agarics. Simply dry the specimens and send them in.

DR. J. BARTON CLELAND.

We present this month the photograph of Dr. J. Barton Cleland, probably the most active worker in the Australian mycological flora. In a private letter he writes that it is very difficult to reach definite conclusions regarding the Australian fungi, particularly the fleshy agarics. Literature concerning Australian species, and particularly Cooke's Handbook of Australian Fungi, is so inaccurate and imperfect, as to make research in that direction exceedingly discouraging. Species of polypores, puff balls, tremellaceous plants and other fungi that retain their characters, when dry, can be identified by sending them to some one who has made comprehensive and comparative studies in this direction, but it is not possible to classify agarics from dried specimens. The only practical thing for Dr. Cleland to do with the Australian fungi, in our opinion, is to determine as many as possible from Fries' Hymenomycetes and the illustrated books of Europe, describe as new species those he has been unable to determine, and then issue a practical handbook of the Australian species, on the plan of Peck's monographs. This method will at least give the Australian workers names for their agarics, which is the first step, and one of great advantage. General workers, such as myself, may help with advice, but the real work on a local flora must be done by local observers. Dr. Cleland is a very liberal contributor to the Lloyd Museum, and we feel that the publication of many notes, based on the specimens received from him, has added much to our knowledge of Australian fungi. Such publications, however, do not have the practical value of a systematic work based on field observation, such as we hope Dr. Cleland will publish. We are very glad to help in the development of local fungus floras, but the **real** work must be done on the ground. We are particularly glad to see Dr. Cleland taking such an active interest in the study of the Australian mycological flora. He is exceedingly active in his work, and has written numbers of articles. He has worked over the phalloids of Australia, and so far as Australia is concerned, has brought the subject of phalloids into very good condition.

THE GENUS CYTTARIA.

The receipt of specimens, both dried and in preservative, of two South American species from Marcial R. Espinosa, Chief of the Cryptogamic Section of the National Museum, Santiago, Chile, has induced us to revise the species of this curious genus. It is known only from Australasia and southern South America. We gave a notice of the Australasian species in Mycological Notes, page 578, and there made the erroneous statement that the South American species were all solid. We gathered that from the illustration, but the specimens on hand show that we were mistaken.

The genus Cyttaria was published by Berkeley (Trans. Linn. Soc., Vol. 19, 1841), and based on specimens brought by Darwin from Terra del Fuego. They grow there in great quantity in the "beech woods" on trees that are much diseased. The Cyttaria is a parasite, and causes large excrescences and deformation of the wood which bear the fungus. In the Cryptogamic Museum at Harvard there are fine specimens of these excrescences, on exhibition, that were collected by Dr. Thaxter. The fungi are gathered and eaten by the natives, but their substance is tough, and from accounts are not very palatable, but the primitive races of this region eat most anything. In his original account Berkeley described and figured the two following species.

CYTTARIA BERTEROI (compiled in Saccardo as Cyttaria Berterii) was described by Berkeley in his original account of the genus. He did not find the spores. His figure looks much like his figure of Cyttaria Darwinii, th only distinction he was able to point out is that the cups' mouths have lacerate remains of the pore coverings. We would not hold that of much importance, but Spegazzini distinguishes it from Cyttaria Darwinii by the same characters and smaller spores 5-6 x 15, and reports it as rare. Monsieur Hariot did not find it. The color is bright orange.

CYTTARIA DARWINII, FROM M. R. ESPINOSA, SANTIAGO (Fig. 992).—This is the original species from the extreme south of Chile. Mr. Espinosa does not give the locality, but I presume they grow in the neighborhood of Santiago. How far north the species extends I do not know.

Fig. 992.

As shown in our photograph it is a hard, globose body when dry, with distant pores. The color is bright orange when fresh. Asci line the pores (excepting the bottom of the pores) in a palisade layer but in specimens I received the spores are immature. They are given by Fischer as 10-15 x 20 mic. hyaline, smooth. By Spegazzini as 8 x 14-16. The characters of Cyttaria Darwinii are its thick, tough flesh and the few distant pores. We present photographs of the two specimens received from Mr. Espinosa. One is a young specimen with

Fig. 993.
Cyttaria Darwinii (in situ)

the pore mouths covered. The pores open, but the exact manner is not stated in any of the accounts. We present also a photograph that we made in the Museum at Paris, of a cluster of young fruit, as they grow on the branch. These were brought from Cape Horn by Monsieur Hariot.

CYTTARIA GUNNII (Fig. 994).—This is the Australasian species, named by Berkeley in 1848. It is the only species known except from South America, and it is only known from New Zealand and Tasmania. It is quite similar to the above two species, hard and heavy when dry, but the pores are closer and still separated by thick walls. The color of the dried plant is white, but when soaked is pale

Fig. 994.
Cyttaria Gunnii.

yellow, which is the color when fresh. When fresh it is evidently much paler color than the preceding species. The spores are globose, 10-12 mic. hyaline, smooth. We gave an account of the species in Mycological Notes, page 578. We have specimens from W. A. Scarfe, H. W. Laing, R. S. Robinson and one unknown contributor, all from New Zealand.

CYTTARIA HARIOTII.—This is a white species, very similar in appearance to the New Zealand species. It was collected by Monsieur Hariot at Cape Horn, and described and figured by Fischer from specimens he saw in the Museum at Paris. It is evidently rare. The difference between it and Cyttaria Gunnii appears to me only a spore difference. The spores are cuboid, 10 mic. in diameter. The figure was reproduced in Engler & Prantl. We failed to note the specimens when we were in Paris.

CYTTARIA ESPINOSAE (Fig. 995).—In the specimens from Marcial R. Espinosa, we find a species quite different from those heretofore known. The others are hard and heavy when dry, with thick flesh and distant pores and thick dissepiments. This is light and thin, with contiguous pores and very thin dissepiments. We do not know the color of the fresh specimens, but it soaks out light pink, and was probably orange when fresh. The coloring matter is contained only in the epidermal cells. In size and shape it is similar to the others, globose, with a short, tapering base. The pores are contiguous, with very thin walls in which feature it differs from all other species. A palisade layer of asci and paraphyses line the sides of the

Fig. 995.

pores, but not the bottom of the tubes. The interior of these specimens is filled with a light, pithy substance, and it is the only species that we have examined where the pith is found in old specimens. All others we have seen are hollow, though, no doubt, pithy when young. The spores are hyaline, elliptical, smooth, and in this collection probably immature. Those I found were about 5 x 8 mic. I presume the specimens were collected by Mr. Espinosa in the vicinity of Santiago, Chile.

Fig. 996.
Cyttaria Hookerii.

The preceding species are all similar in many features, but the following is so different in shape and arrangement of the pores that a "new genus" has on two occasions been suggested, but not proposed.

CYTTARIA HOOKERII (Fig. 996).—This little species was named and figured by Berkeley from Cape Horn in 1847. We reproduce the figure, also a section (Fig. 997). We think the figure is so characteristic, there can be no trouble in recognizing the plant, although his description calls for "cups" and the figure does not show "cups," but cavities. The plant is evidently very abundant at Cape Horn and so reported by both Hariot and Spegazzini. The latter states that the "loculi" are first closed then lacerate, dehiscent. He describes the spores as elliptical, 10 x 15 mic. and the color of the fresh plant as yellowish cinnamon.

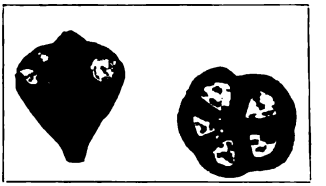


Fig. 997.

Synonyms.—Cyttaria Purdiei, figured by Buchanan from New Zealand, is surely Cyttaria Gunnii.

Cyttaria Reichei from Chile, as figured and described by Hennings, was based evidently on a large specimen of Cyttaria Darwinii.

Cyttaria disciformis, named by Léveillé from Chile, is said to be not a Cyttaria, though if anyone knows what it is he has not stated.

RESUME.—We present below photographs of the three species we have in our museum, which show at a glance the difference on which they are based.

Fig. 998 is Cyttaria Espinosae, Fig. 999 is Cyttaria Gunnii, and Fig. 1000 is Cyttaria Darwinii. The following appear to be the principal facts as to the genus, as far as known. It occurs only in New Zealand, Tasmania and southern South America. It grows only on the native beech or Nothofagus as now classed. Two

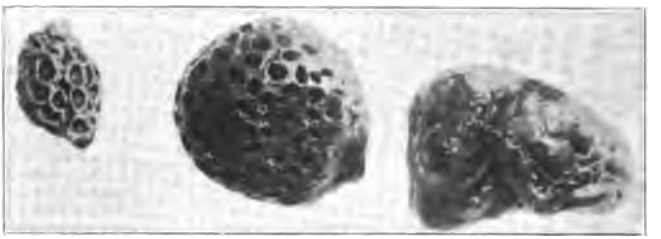


Fig. 998. Fig. 999. Fig. 1000.

species, viz., Darwinii and Hookerii, are common at Cape Horn. Berteroi is rare there, and Espinosae is known only from further north (Santiago). Cyttaria Gunnii only occurs in New Zealand and Tasmania.

We hope this article may interest others and lead to additional specimens and information. Simply dry the specimens. It is an unnecessary expense and trouble to send in formalin and in most cases useless, as they usually disintegrate into an amorphous mass before reaching me. Dried specimens can be soaked, and will resume their original size, shape and characters.

DESIDERATA.—We should like to know how the cups open. They are closed at first, but is it by an operculum that falls off each cup as one piece, or is it a membrane that peels away from the whole fruit?

LOST LOCALITY.—Berkeley states that a specimen of a Cyttaria is in Delessert's herbarium, as coming from Reunion about 140 years ago. Berkeley thinks it is an error of location. Attention, you who are lucky enough to live in Reunion.—Does this genus grow with you?

NOTES ON XYLARIAS

We continue our consideration of foreign Xylarias, and trust that those residing in tropical countries, particularly, will collect and send us such as they find.

Xylarias are abundant everywhere, especially in the tropics, but the species are less known than those of most any other section of mycology. They grow usually on wood, sometimes in the ground, and may be known at sight, being black, carbonous plants that can not be mistaken. If you will look around you will find many Xylarias.

XYLARIA SCOPIFORMIS, FROM J. A. STEVENSON, PORTO RICO (Fig. 1001).—Clubs slender, with an acute point 4-5 cm. long, 2 mm. broad, fragile, almost entirely carbonous, with scanty, white stroma (or none). Usually simple, rarely branched. Stipe filiform, 1-1½ cm. with a small pad of dark pubescence at base. Perithecia partially imbedded, forming a nodular, moniform club. Spores 5 x 10 rarely 6 x 12.

This seems frequent in American tropics. We have it abundantly from Cuba. We take for it the only sure name we know and our figure is from the type. It was distributed by Kunze and cited by Montagne, though we believe not formally described under this name.

Fig. 1001.

SPECIMENS.—Stevenson, Porto Rico (3483); Torrend, Brazil (384); Lloyd, Cuba (54); Rick, Brazil (408); Mousset, Java (39).

SYNONYMS.—Xylaria caespitulosa, Cesati from his type at Kew although Cooke's figure (127) has not the most remote suggestion of it. It is probable that the old Xylaria tuberosa, named by Persoon from the Gaudichaud voyage, is the earliest name, but the type is young and doubtful. It also has a forked club and Xylaria scopiformis is usually simple. It is also probably Xylaria gracillima of Fries' description, but not as understood by Berkeley and Montagne. It was included in Thiessen's work as a variety, tuberosa, of Xylaria Hypoxylon, the varietal name taken from Persoon and for me no form of Xylaria Hypoxylon. Xylaria inaequalis, Berkeley, the cotype at Paris which seems correct, is this plant, although, unless I have made some error in my photographing, there is some confusion as to the specimens so labeled at Kew.

XYLARIA PARTITA, FROM J. A. STEVENSON, PORTO RICO (Fig. 1002).—Stem simple or branching, or as in specimen photographed with the club, proliferous. Clubs ½ to 1½ cm. long, 1 mm. thick, black, fragile, nodular, with a filiform, smooth stipe. Spores 5-6 x 10-12.

Fig. 1002.

We have concluded that we will name and label the specimens of Xylaria for which we are unable to find names, and not fill our museum with unnamed specimens as we have in the Polypores. We have a feeling, however, that Xylaria partita is only a branching, proliferous form of Xylaria

scopiformis, with which it agrees in the slender, fragile, nodular clubs and spores. It appears to be same as Theissen figures as Xylaria carpophila var. luxurians, attributed to Rehm, but it does not agree either with Rehm's figure or spores.

XYLARIA APICULATA, FROM JOHN A. STEVENSON, PORTO RICO.—Clubs black, ½-1 cm. long, apiculate, rarely obtuse. Surface with fine, raised lines. Stipe black, filiform, about 1 mm. thick, smooth, varying much as to length, ½ to 4 cm. Spores mostly 6 x 12-14 rarely up to 24 mic. long, when young with a large gutta; when old with an indistinct septum.

This is a common plant in the American tropics. Our illustration (Fig. 1003) is the usual size, but it varies much as to length, both as to stipe and clubs. Usually it is simple, rarely there are two clubs on the same stem, and more rarely a stem bears four or five little fasciculate clubs. The real character of the species is the raised lines on the clubs, as shown in our enlargement (Fig. 1006). We take a name for the plant proposed by Cooke and the type photograph seems to be same as our figure 1003. It is the most suitable name, though originally the type is from New Zealand and described as having

Fig. 1003.

Fig. 1004.

Fig. 1005.

Fig. 1006

larger spores than the American plants usually have. We think it is same species, however. It is probable that Xylaria trachelina, named by Léveillé from West Indies, is the same plant, from description, but we have found no type.

We do not question but that the following were based on the same plant:

Xylaria hypoxylon var. mucronata, as Berkeley labeled a specimen at Kew. It has no relation to Xylaria hypoxylon and the name

mucronata can not be used, as it certainly is not Schweinitz's plant so illustrated (in Letter 64, Fig. 985), although nothing is known of Schweinitz's plant excepting his figure. Cooke gives a good figure under the name Xylaria mucronata, but he gets his idea from Berkeley's plant and his name from Schweinitz. Berkeley never connected the two.

Xylaria Zealandica is very similar as to clubs, and Cooke emphasizes the lines on the clubs, but describes the spores as 10 x 32-35, which is very much larger than in the American plant. Probably it is the same species. It is the only similar species where these lines have been noted in the description. Theissen evidently considers it a simple form of Xylaria arbuscula, as named by Saccardo from some adventitious plants in a hothouse in Italy. In the original sense this is a much larger plant with multiplex, fasciculate clubs, and I think it is not proven that it takes simple forms like this. The spores in the American plant are mostly 12-14 mic. long. A few we note 16-18 mic. and we saw one spore over 24 mic. It is evident that the exact size of Xylaria spores is not important. Species based on spore size alone are not of much value when one can find spores less than 12 mic. and more than 24 mic. on the same slide.

XYLARIA THEISSENII (Fig. 1007).—Stem long, 7-10 cm. slender, smooth, 1-1½ mm. thick, rooting at base (from the ground). Club short 1-1½ cm., tipped with a slender, filiform apex. Perithecia partially imbedded, or almost free, forming a tubercular club. Spores 9-10 x 24-28.

This is a rare plant only known from Brazil. We have seen only Theissen's exsiccata (No. 235), kindly loaned us by Dr. Brenckle. Theissen labels it, and includes it in his work as the second form of Xylaria Thyrsus, but it has no analogy whatever to Xylaria Thyrsus, known only from Java and India, and which has no carbonous crust, but an entirely white, fleshy stroma, and is in fact not a Xylaria. Nothing like "Xylaria" Thyrsus is known from Brazil. In general appearance Xylaria Theissenii approaches Xylaria filiformis, but is a larger plant with much larger spores. We did not break the specimens, and we do not know, but we think probably that, like Xylaria filiformis, it has no white stroma at all.

If we were revising the genera of the large Pyrenomycetes, we should propose a "new genus" for "Xylaria" Thyrsus for it is entirely out of place in the genus Xylaria. If this were done, those who depend for determinations on the "literature" would not make the mistake of referring to the species a true Xylaria.

Fig. 1007.

XYLARIA GRACILIS, FROM MARCIAL R. ESPINOSA, CHILE (Fig. 1008).—Stem slender, smooth, rarely simple, usually branched, bearing three or four clubs. Clubs 1-1½ cm. long, acute, 2-3 mm. thick, fragile. Stroma white, well developed. Perithecia partially imbedded, forming a tubercular club. Spores 6-7 x 20.

Fig. 1008.

We saw but one other Xylaria in the museums that branches near the base, bearing several clubs, viz., Xylaria Gardneri, which has no relation to this. Cooke figures two other such species, viz., Xylaria caespitulosa and Xylaria rhizomorpha, but both were purely fanciful, the types having simple unbranched stems. Theissen (t. 10, fig. 4) figures what appears to be this plant under the name Xylaria fasciculata, but there is nothing in the original of this description to indicate that it is branched. Xylaria gracilis was named in manuscript by Klotzsch (cfr. Sacc., Vol. 1, p. 317), and the type, all heretofore seen by me, is at Kew. It is an old collection by Humboldt from South America.

XYLARIA CONCURSA, FROM MARCIAL R. ESPINOSA, CHILE (Fig. 1009).—Stem branching and bearing one or two fertile clubs and one or two conidial clubs. Clubs 1½-2 cm. by 3 mm. cylindrical, even, acute, or rounded at the apex. Perithecia imbedded, not protruding. Stroma white, scanty. Spores 6-7 x 14.

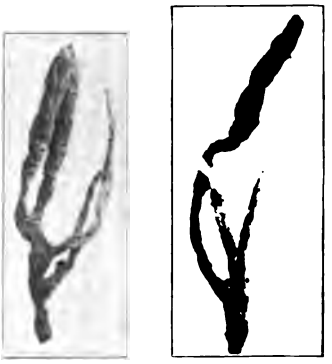


Fig. 1009.

I know but one other species that branches at the base in this manner, viz., Xylaria gracilis (cfr. above), which has rugulose, not even, clubs. There is no other species I believe that bears conidial and ascigerous clubs or separate clubs, but concurrent. Still it is possible that Xylaria gracilis and Xylaria concursa are different stages of the same species.

XYLARIA TUBERIFORMIS, FROM J. B. CLELAND, AUSTRALIA, as named from New Zealand. Spores 8 x 16 described as 25 mic. We present Fig. 1010 the type, also Fig. 1011, specimens from Dr. Cleland which show that it is not always "tuberiform." Xylaria clavulus as illustrated by Cooke seems the same plant, but the type has no resemblance to it. Xylaria globosa, named by Fries as Hypoxylon, and described by Rehm as Xylaria, is the same to the

Fig. 1010.

Fig. 1011.

eye, but has narrow spores 6-7 x 18-24. Xylaria haemorrhoidalis from Ceylon, also similar to the eye, has very large spores, 10 x 25-40. We have a suspicion that Xylaria tuberiformis will finally be found to be depauperate Xylaria castorea.

THE GLAUCESCENSE OF HEXAGONA PORES.

From some freshly collected specimens of Hexagona speciosa, recently received from P. van der Bijl, South Africa, I solved what was to me a mystery when I wrote the Hexagona pamphlet (cfr. page 4); why some pores of Hexagona are glaucescent and others are not. The glaucescence is the hymenium. It is probable I would have found that out before if I had taken the trouble to section the pores. The hymenium of brown Hexagonas of the tropics seems to be developed irregularly or perhaps disappears from old specimens. I have eight specimens of Hexagona Pobequini, mostly old, and only a few pores of one specimen are glaucescent.

A section shows the white hymenium forming a uniform layer over the brown hyphae tissue. It consists of a palisade layer of obtuse club-shape basidia, in the specimen examined apparently young basidia, for I found no sterigmata nor spores, and each had a large, globose nucleus, suggestive of young basidia.

RARE OR INTERESTING PLANTS RECEIVED FROM CORRESPONDENTS

PSEUDOCOLUS ROTHAE, FROM J. B. CLELAND, AUSTRALIA.—We present a photograph (Fig. 1012) of the dried specimen which gives some idea of the plant, but a photograph of the fresh plant is much desired. We present also a photograph (Fig. 1013) of the same species dried, from A. Yasuda, Japan.

Fig. 1012.

Fig. 1013.

In this connection we call the attention of our Australasian friends to the fact that the following phalloids, well authenticated in these countries, have never been satisfactorily illustrated and that photographs of the fresh plants are specially desired, Pseudocolus Rothae, Pseudocolus Archeri and Clathrus pusillus.

Dr. Cleland considers Pseudocolus Archeri to be the same plant as Anthurus aseroeformis, as illustrated in our Phalloid Synopsis, Fig. 46. There is a discrepancy somewhere, for the plant we received from W. G. Gardner (Note 86) is surely not the plant of our Fig. 46.

POLYPORUS PALUSTER, FROM S. H. BURNHAM, NEW YORK (Fig. 1014).—In our Apus Polyporus we referred to this plant incidentally on page 383, but did not include it in the body

of the book, as it was doubtful to us. Mr. Burnham's collection first locates it definitely. Polyporus paluster is a pure white plant and dries white. The surface is rather smooth, the flesh hard and the spores about

Fig. 1014.

3 x 10, are cylindrical, mostly pointed at both ends. It grows on pine and is quite close to Polyporus albidus (on Abies) in Europe, but differs as noted above, and chiefly in its larger spores. We are very glad indeed to locate definitely another species in this puzzling white Apus section.

STEREUM SENDAIENSE, FROM PROF. A. YASUDA, JAPAN (Fig. 1015).—As named by Yasuda, I believe it is a good species. I find nothing in my photographs or notes like it. To the eye it is the same as Stereum membranaceum, a common plant of the tropics, same color and habits. But the "structure" is different. It has no metuloids. A section shows a very loose, hyaline basal layer on which reposes a more compact and thicker, hyaline layer (the hyphae bearing abundant conidia) and a thin, colored, hymenium layer. I do not make out basidia nor spores. Surely the basidia are not in a palisade layer like the usual Stereum. If some day it should turn out to be an "Eichleriella" like Stereum Leveillianum I should not be at all surprised. That is one advantage of modern classification, no one but a basidial expert can tell the genera now with any security. If one does not find basidia in his specimen, and on certain classes of plants they are very difficult to find, he can no longer refer them to a genus even. The old fellows were not bothered with that, and the new ones are having their troubles. Witness the case of Bresadola with "Radulum Kmetii" or Burt with "Septobasidium spongiosum"

Fig. 1015.

or Patouillard with "Thelephora Schweinitzii." We do not undervalue microscopic features in classification, but we are firm believers in the saying "N'abusez pas du microscope."

POLYSTICTUS PHAEUS, FROM PROF. A. YASUDA, JAPAN (Fig. 1016).—Pileus rigid, thin, sessile, or subresupinate. Surface dark, mummy brown, velutinate, zonate. Context brown. Pores relatively large and shallow, ½ mm. with thin edges. Setae none. Spores (hyaline) not found.

Fig. 1016.

This is quite close to Polystictus phocinus of Ceylon. Same general color context and surface, but pores much larger. While I think it is best classed as Polystictus it could be called Hexagona with as much reason as Hexagona variegata is so called. In fact, the plant is close to Hexagona variegata. (Cfr. Hexagona pamphlet, page 12.) I believe its best classification is with Polystictus phocinus and caperatus. Similar species with brown context are not many. One was recently named from Japan, Polystictus umbrinellus, but as it is described as glabrous, I judge it is not the same as this. Of course, I do not know that this is phaeus, which is not known in the flesh, but it answers the description, and we might as well use the name. It has the same color, surface and pores as Léveillé described, and the relatively large pores are unusual.

PTYCHOGASTER JAPONICUS, FROM PROF. A. YASUDA, JAPAN (Fig. 1017).—White, soft, fleshy, growing on the bare ground. Tissue of large, irregular, rigid fibrils, which project, forming pubescent nodules. Conidial spores not found.

Fig. 1017.

Ptychogaster (cfr. Myc. Notes, Polyporoid Issue, page 30) is not an autonomous genus, but a modification of Polyporoids, and the species should not be named excepting for convenience in keeping them in the museum. This plant is very similar to Ptychogaster albus (cfr. l. c.), but is entirely different in habits (on ground) and also form. The absence of conidial spores (usually so abundant in Ptychogasters) throws doubt on its "genus," but probably they are not formed in the specimens, which appear to be young.

PSORA CRENATA, FROM MRS. JOSEPH CLEMENS, TEXAS (Fig. 1018).—Determined by Prof. Bruce Fink. When I first saw it I thought it was a very novel fungus, but when I sectioned it I found it was a lichen. I sent it to Prof. Fink, who is our best authority on the lichens, and he determined it as above. I often receive lichens for fungi, and can usually tell them at a glance, but this one deceived me. It grew on the bare ground, and its general resemblance to a fungus is very close. We apologize to our readers for presenting in "Mycological" Notes a figure of a lichen, but the species may puzzle others, as it puzzled me.

Fig. 1018.

IRPEX SAEPIARIA, FROM DR. J. B. CLELAND, AUSTRALIA (Fig. 1019).—Resupinate with reflexed pileus. Pileus coriaceous, dark brown (Brussels) smooth. Context concolorous. Teeth dense, 2-3 mm. long, concolorous, irregular. Hymenium white. Setae densely covering the teeth, projecting 20-30 mic. Spores globose, 5 mic., smooth.

Fig. 1019

In Mycological Notes, page 633, we noticed a very similar plant, Irpex iyoensis from Japan. To the eye they are much alike, but the setae characters are different. There occurs in the Handbook a record of Irpex tabacinus, an American species, in Australia. The probabilities are the record was based on this same plant, but Irpex tabacinus, while somewhat similar, is quite different. All these plants belong to a section of Irpex corresponding to "Hymenochaete." There is no "generic" name for this section now, although they are included with others under the generic term "Hydnochaete." We considered this "genus" in Myc. Notes, page 559, but there restricted it to species with granular or tubercular hymenium.

PHYSALACRIA INFLATA, FROM REV. C. TORREND, BRAZIL (Fig. 1020).—We gave in Myc. Notes (old Spec. Series, page 4) a full account and history of this unique and rare little species. We are much pleased to have it come in to us from Brazil. I believe the plant has been reported from the Philippines, but I have only heretofore known it from the United States.

Fig. 1020.

There has been recently a species (Physalacria rugosa) named from Brazil, which I judge from the description is the same as our United States' species.

TREMELLA FUSCA, FROM REV. C. TORREND, BRAZIL (Fig. 1021).—Cerebrine, reddish brown, 2-3 cm. in diameter. Basidia globose, with brownish contents, mostly cruciately divided, 12 mic. in diameter. Spores narrow, obovate, tapering to the base, hyaline, 4-5 mic. broad at upper end, 10-12 mic. long.

Fig. 1021.

The tremelloid plants that grow in the tropics are particularly desired. The temperate region species are very well known, but little has been done on the tropical species. Moeller wrote on the Brazilian species, and his work was so well done that they may be recognized, which is something that can rarely be said about mycological work. I hoped to find this species in Moeller, but I did not. The only brown species he records are Tremella auricularia and Tremella frondosa (the latter under the name juggle, Tremella undulata) and both differ in form (foliaceous) and spores (more globose). In fact this is the only Tremella I have met with narrow, obovate spores. Most Tremellas have subglobose, or at the best, pear-shaped spores. Moeller has named a number of tremellaceous plants from Brazil, and described and figured them so that they may be recognized. We should like very much to get them in our museum.

TRAMETES STOWARDII, FROM DR. F. STOWARD, W. AUSTRALIA (Fig. 1022).—A form of lilacino-gilva. This is the same plant as described in our Fomes pamphlet, page 226, as to context and other features, but the surface is so strongly rugose that it is entitled to a name as a form. We present Fig. 1022, the upper surface of Trametes Stowardii, and in contrast Fig. 1023, Trametes lilacino-gilvus, the usual species in Australia with pink context. The photographs do not show the contrast that the specimens do.

Fig. 1022.

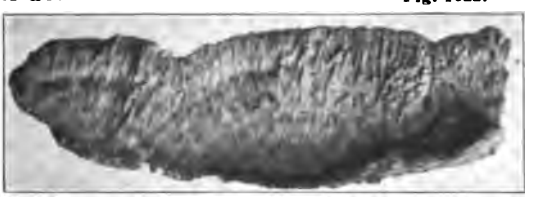


Fig. 1023

TRAMETES FEEI IN AUSTRALIA.—On going over our specimens we note one which we received from E. Cheel (No. 8), with an even pileus. This is Trametes Feei of the American tropics. It is rare in Australia, and we were under the impression it was replaced by Trametes lilacino-gilva, but we shall have to revise our views now. Mr. Cheel's specimens can not be told from the Brazilian plant. The two species are very close. The Australian, in addition, usually has larger pores, but that is only relative. Trametes Eucalypti, of our Fomes pamphlet, should be deleted. It is surely only Trametes Feei.

POLYPORUS MEGALOPORUS, FROM J. B. CLELAND, AUSTRALIA (Fig. 1024).—Pileus suborbicular, 2-3 cm., laterally attached by a short stipe-like base. Color pale alutaceous. Surface with patches of brown branched hairs. (Fig. 1025.) Context and

Fig. 1024.

Fig. 1025.

pore tissue pale alutaceous. Pores large, round or slightly elongated, about ½ mm. in diameter. The pore mouths bear brown branched setae, shown in Figs. 441 and 442 of our Stipitate Polyporoid pamphlet. Spores 6 x 12, cylindrical, elliptical, hyaline, transparent, guttulate, smooth.

If I were revising my Stipitate Polyporoids I would remove to one section those species which are characterized by the peculiar, branched setae shown in the figures cited. Although these peculiar setae are the most prominent features of several species (or forms), they were never considered or apparently noted until my pamphlet appeared.

On receipt of this specimen I was disposed to give it a name on account of its pale color and small size, but on comparison with other specimens of Polyporus megaloporus I find it is too close to be held as distinct. The species is usually much larger and of a darker color. In addition, I find I have a previous specimen from F. M. Bailey, Brisbane, which is typical. I have the species now from Henri Perrier de la Bathie, Madagascar, Rev. J. Rick and Gustavo Peckolt, Brazil, F. M. Bailey and Dr. Cleland, Australia. I only noted one collection in all the museums of Europe, which is the type at Paris.

MYCOLOGICAL NOTES.

BY C. G. LLOYD.

No. 49.

CINCINNATI, O. JULY, 1917.

CAROLUS SPEGAZZINI

MYCOLOGICAL NOTES

Issued by C. G. LLOYD.

224 West Court Street. - - CINCINNATI, OHIO.

SUBSCRIPTION PRICE.—A little personal interest on the part of the recipient in picking up and sending to my address, specimens of the larger fungi. All are desired excepting specimens of fleshy Agarics. Simply dry the specimens and send them in.

CAROLUS SPEGAZZINI

En présentant ici à nos lecteurs le portrait de Carolus Spegazzini, nous regrettons de n'avoir que quelques notes personnelles à y ajouter. Spegazzini a depuis plusieurs années publié de nombreuse travaux sur les champignons de l'Amérique du Sud qu'il étudie spécialement. Avant de venir en Amérique il avait aussi fait paraitre plusieurs études sur la mycologie d'Italie, son pays d'origine. Depuis il s'est surtout attaché aux espèces qu'il considérait comme nouvelles. Suivant nous toutefois, cette façon d'étudier une région déterminée ne peut aboutir à des résultats permanent. C'est un fait désormais bien reconnu que les fungi du monde entier appartiennent à des espèces dont la distribution géographique a une immense étendue; il est devenu très difficile d'etablir si l'on à affaire à une espèce vraiment nouvelle a moins de connaitre parfaitement les espèces analogues des autres régions. Une simple description permet rarement de bien identifier une espèce et tout mycologiste qui croit avoir decouvert une "nouvelle espece" devrait se faire une règle absolue d'obtenir une bonne représentation par croquis ou cliché de l'espèce en question et de l'ajouter à ses notes; de la sorte d'autres mycologistes pourront juger en connaissance de cause de la valeur de la decouverte. Plusieurs des "espèces nouvelles" identifiées par Spegazzini sont vraiment telles, nous n'en avons nul doute; mais il se peut aussi que plusieurs ne le soient pas et nous n'avons nul moyen de contrôler ses conclusions.

Si Spegazzini avait la bonne pensée d'envoyer une série de ses nouveaux specimens soit a Kew, soit à toute autre institution du genre en Europe ou en Amérique, nous sommes convaincus que tout mycologiste s'empresserait d'adopter les noms par lui donnés aux espèces d'un mérite reconnu. Quelques échantillons des nouveaux champignons de Spegazzini sont parvenus en Europe et on peut les voir dans une des collections d'exsiccatae de Balansa. C'est à peu près tout ce que l'on connait d'une façon certaines des découvertes de Spegazzini. Spegazzini, semble t'il, considére ses travaux comme

de peu d'intéret pour tout autre mycologiste que ceux d'Amérique du Sud. Qu'il se détrompe. Comme nous l'avons déjà dit, les fungi Sud-Américains ne différent guère de ceux du reste du globe; les espèces vraiment endémiques sont relativement rares; en conséquence elles seraient fort intéressantes à connaitre.

Cinq mycologistes de renom se sont occupés des champignons spéciaux à l'Amérique du Sud: Berkeley, Patouillard, Hennings, Moeller et Spegazzini, et tout ont donné des noms spécifiques aux nouvelles espèces qu'ils ont cru reconnaître. Les trois premiers ont envoyé aux musées d'Europe des spécimens qui y sont soigneusement conservés et catalogués sous les noms donnés par ces auteurs. Ces noms sont désormais acquis et continueront d'avoir cours bien que probablement Spegazzini en ait fait la découverte antérieurement et leur ait déjà donné un tout autre nom spécifique. La nomenclature de Spegazzini eut eu un droit certain de priorité si les mycologistes d'Europe et d'ailleurs avaient le moyen de reconnaître ses espèces. Seul Moeller en publiant ses études sur les fungi Sud-Américains a pris la peine d'y ajouter des croquis et photogravures qui permettent de les identifier. Il serait fort a désirer que son exemple fut généralement suivi.

NOTES ON XYLARIAS

We continue our consideration of foreign Xylarias and trust that those residing in tropical countries, particularly, will collect and send us such as they find.

Xylarias are abundant everywhere, especially in the tropics, but the species are less known than those of most any other section of mycology. They grow usually on wood, sometimes in the ground, and may be known at sight, being black, carbonous plants that can not be mistaken. If you will look around you will find many Xylarias.

XYLARIA PLEBEJA, FROM T. HUNTER, AFRICA (Fig. 1026).—This agrees with the cotype at Kew which was from Borneo. For me it belongs to the polymorphum section of the genus with solid, white stroma and rugulose surface. Its character is its caespitose habits and small spores 5-6 x 10-12. I can not agree with Thiessen's interpretation of Xylaria plebeja, when he applies it to a *hollow* plant of the same caespitose habits and spores. I think the strongest character for grouping the Xylarias is the nature of the stroma. Xylaria plebeja is close to Xylaria castorea of New Zealand in its spores and stroma, but differs in its habits. We present figure 1026 of the specimen from Mr. Hunter. Our photograph of the type at Kew could hardly be told from this figure.

Fig. 1026

XYLARIA CLAVUS, FROM J. P. MOUSSET, JAVA (Fig. 1027).—Plant 1-3 cm. high, with a dull, black surface: capitate tapering to the base, sometimes with slender stipe. Context solid, white, firm. Perithecia imbedded near the surface of the head only. Spores 7 x 20-22, dark, rather acute at the end.

Fig. 1027.

We have had this among our unnamed Xylarias for several years, and have concluded to name it in connection with Daldinia angolensis, which it resembles in shape. This is, however, a true Xylaria with white, hard, fleshy context. It resembles a nail, hence the name. Fries named from Brazil in 1830 a Sphaeria Clavus which is now included in Kretzschmaria and must not be confused with this plant.

DALDINIA ANGOLENSIS, FROM T. HUNTER, AFRICA (Fig. 1028).—This is the first time we have received this species, or have seen specimens. It was figured fifty years ago by Currey from Angola, Africa (cfr. note 473), and named Hypoxylon angolense. It was compiled in Saccardo, Vol. I, as Daldinia angolensis, but Cooke arranged it in Rhopalopsis and later Saccardo changed it into the latter genus under the name Kretzschmaria. He had better have left it where it was. Both Saccardo and Cooke were guessing, and Saccardo made the best guess. It is a typical Daldinia as to spongy, zonate context, and Daldinia rests on this character. It is the first species, however, of Daldinia where the stipe is strongly distinct from the fruiting portion. Daldinia vernicosus has a stipelike base, but not strongly distinct. The plant is capitate, tapering to the base, and in shape resembles a round headed nail. The surface has a black, shiny crust. The texture of the stipe is hard, black, carbonous; of the head is soft, spongy, greyish, with a zone of harder black tissue beneath the perithecia, which are imbedded near the surface of the head. Spores are 6-7 x 12-14, obtuse, dark, when young paler and guttulate. We present a figure 1028 natural size and 1029 enlarged. As far as known, this species only occurs in tropical Africa. We have, very rarely, in our southern United States a similar plant (externally), known as Xylaria Cudonia, which may prove to be the same species. (Cfr. Letter No. 64, page 3.)

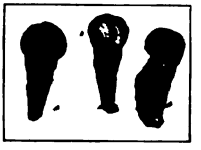


Fig. 1028.

Fig. 1029.

PHOTOGRAPHS OF PHALLOIDS

We are pleased to publish a new photograph of a new (?)phalloid received from C. A. O'Connor, Mauritius.

PSEUDOCOLUS MAURITIANUS (Fig. 1030).—We present a photograph of an interesting phalloid received from C. A. O'Connor, Mauritius. There were no notes as to color with it, but it was no doubt red. The photograph, which was made from the fresh speci-

Fig. 1030.

men by D. d'Emmercy, is so characteristic that it will permanently fix it, and we hope others will find it and confirm it. Mr. O'Connor, who is leaving Mauritius shortly on military service, writes me that specimen will be delivered to my English address.

We propose a new name for it, although we have a suspicion that the plant now has three names.

Pseudocolus Mauritianus has five columns united by connecting arms at the top. It belongs to the clathroid alliance, and has a general relation to Clathrus Treubii (Phal. Syn. Fig. 72), of Java.

Pseudocolus rugulosus (Phal. Synopsis, Fig. 67), with three columns directly united at top, is known only from a very old drawing at Kew (from Java), and it may be same species.

Pseudocolus fusiformis (Phal. Synopsis, Fig. 68), known only from an old drawing at Paris from the neighboring island of Reunion, may be a crude and inaccurate conception of the same species.

Pseudocolus Javanicus (Phal. Synopsis, Fig. 66), known only from Penzig's drawing and based on a single specimen from Java, has three arms directly united at top, but may be same species. It appears much smaller, however, though the figure cited is enlarged twofold.

It is impossible to state from these old, vague figures what the plants really are. The phalloids of the tropics are gradually, by the aid of photographs, reaching a definite and permanent status, and everyone who aids with a good photograph of a rare form adds to real knowledge. The main trouble with the phalloid subject is to interpret the crude and inaccurate figures of the past.

It is the duty, we believe, of the staff of all Botanical Gardens in tropical countries to have a series of photographs of the phalloids prepared. Even if they are not directly interested in mycology, they should aid by photographing the curious phalloids when they are noted growing. Only by this means will a final, accurate knowledge of the subject be attained. We shall be glad to receive the photographs, name them, and if a good photograph of the specimen has not been published, we will publish it.

THE EMBRYOLOGY OF ANTHURUS

Miss A. V. Duthie, South Africa, must must have anticipated our request for an egg of Anthurus (cfr. the recent Myc. Notes, page 647), for she sends an egg in alcohol. A section, figure 1032, shows that it is entirely different from Lysurus, with which it has been confused.

Fig. 1031.

Fig. 1032.

Lysurus has the arms in the egg connected with the volva by a thin plate (which we call umbilical), and the gleba entirely surrounds the arms, excepting, of course, where the plates are attached. (Compare Myc. Notes, page 647.) Anthurus does not have plates connecting the arms (or rather lobes) and volva, and the gleba is placed in the center and on the sides of the arms. There is no gleba on the back of the arms. Lysurus belongs to the Clathrus group, and Anthurus to the Phalloid group. Some day the phalloids will be divided into two groups on the structure of the eggs.

Our figure 1031 represents a longitudinal section of an egg. Figure 1032, a cross section of a half through the lobes.

ADDITIONAL NOTES ON CORDYCEPS

We ask all of our readers who find Cordyceps to simply gather them with the hosts attached, dry them, and send to us. There has been a great deal written about Cordyceps, more or less true, but there are very few specimens in the museums.

CORDYCEPS HAWKESII. PHOTOGRAPH FROM L. RODWAY, TASMANIA (Fig. 1033).—This is a dubious species, of which no specimen has been seen by me, none being found in either of the two museums of London. It is quite close to Cordyceps Gunnii, and in my pamphlet I suggested that it was a short, clubbed form of that species, and I still think its relations to that species are too close. Mr. Rodway advises me that it differs from Cordyceps Gunnii in that only the fertile portion is yellow and is entirely distinct from the stipe, also the ostioles are more prominent. The figure that we present herewith of Mr. Rodway's photograph is natural size, and it is made from probably the only specimen in existence. By reference to Cooke's figure reproduced in our Synopsis it will be noted that Cooke took his usual liberties in drawing his figure, and that there are several discrepancies. The most glaring one is that the Cordyceps is represented as growing from the back of the host. Cordyceps Hawkesii grows from the same host as Cordyceps Gunnii, which is the larva of a species of Pielus. By reference to our figures of Cordyceps Gunnii it will be noted that it grows in the same manner, and does not differ from either figure of Cordyceps Gunnii more than each figure differs from the other. I believe it is best referred as a synonym for Cordyceps Gunnii.

Fig. 1033

CORDYCEPS DOVEII. PHOTOGRAPH FROM L. RODWAY, TASMANIA (Fig. 1034).—This is another of the rare species of Australasia which is not known to me from any specimens. We presented in our pamphlet a copy of the original drawing found at Kew, and it will be noted by comparison with the photograph of the specimen sent by Mr. Rodway that the drawing is quite characteristic. The species was originally from Mr. Rodway and the only specimen that exists is probably in Mr. Rodway's possession. It has never been found by anyone else. Our figure is natural size. As we stated in our Cordyceps of Australasia, there is no other similar Cordyceps known. In the figure prepared by Mr. Rodway (Cfr. Synopsis, Fig. 620)there is a detail drawing of the clubs and perithecia that gives a better idea of the plant than this photograph.

Fig. 1034

A PARASITE ON A PARASITE

We have a most valued correspondent in New Zealand, Mr. H. Hill, Napier, who sends us fine collections of the curious Cordyceps Robertsii, which seems frequent in this country. This Cordyceps is a parasite on a large larva, killing its host, and flourishing at the expense of the animal tissue.

We gave an account and photograph of it in our Cordyceps of Australasia, page 5, figure 616. In a fine collection recently received of this Cordyceps, we noticed two clubs that were infected by some parasitic, fungal species. This is a section of mycology about which we know little, but we were curious to know its nature and examined "au microscope." It is strange, but we found it to have exactly the same spores as the Cordyceps has, and would be classed in the same section as Cordyceps, viz., the genus Ophionectria, at least according to key characters, although the perithecia are not "bright-colored." For convenience in our museum we have labeled it Ophionectria Cordyceps.

Fig. 1035.

Mr. Seaver, to whom we sent a portion of a specimen, suggests the possibility of the Cordyceps having produced a second crop of perithecia on an old fruiting club. We hardly think this is an explanation for the second layer of perithecia are only produced where the club is diseased, and the greater part of each infected Cordyceps club is not diseased and has normal perithecia.

We present a photograph of a portion of the Cordyceps club (enlarged) bearing the Ophionectria. This parasite seems to abort the perithecia of the Cordyceps and produces its own perithecia which have the same spores. In fact, it is a kind of a vegetable cuckoo.

A parasite growing on another parasite illustrates the old rhyme:

"Great fleas have little fleas upon their backs to bite 'em,
And little fleas have lesser fleas, and so ad infinitum,
And the great fleas themselves, in turn, have greater fleas to go on;
While these again have greater still and greater still, and so on."
—De Morgan: A Budget of Paradoxes.

NEW SPECIES

I hope my readers will not infer from my publications that I have degenerated into a "new species" hunter. I get so many plants from regions where there have been but little collected, and so many species unknown to me come in, that there is nothing for me to do but to either give them a name or pile them up unnamed in our museum. I have been pursuing the latter course so long that my museum is becoming clogged with unnamed plants. Of the two evils I think the former is preferable, although I have not much idea that it will be of much practical service, excepting in my own collection and to my correspondents.

I am not looking for "novelties." I should much prefer the old species, but I can not help if I get plants that I do not know. There are more foreign plants come to me every few months than Fries got during his life. Naturally in these quantities, and from uncollected regions, there are a number that I can not name. The real study of Mycology is the classification, distribution and relative abundance of the species. "New species" are an incidental part of this work, but there are very few "new species" now that are at all common. They are the rarer local plants. In puff balls, we were not troubled with many "new species." During six years spent on the work, we did not propose one a year. But the polypores are either more variable, so that we can not always recognize the old species, or the species are more numerous. We get an embarrassingly large number for which we do not have names.

We sometimes get letters from correspondents regretting that they have probably not sent any novelties. We are more glad to get the "old species" than we are those we can not name. The more we handle specimens the better we learn the species, and not infrequently something "new" develops about "old" species. We do not deny that we are much gratified to receive such striking novelties as Sebacina Amesii from F. H. Ames, New York, Paulia resinacea from J. T. Paul, Australia, Mesophellia castanea and Diploderma insolitum from C. C. Brittlebank, Australia, Arachnion Scleroderma and Arachnion giganteum from Miss A. V. Duthie, South Africa, Pyrenopolyporus Hunteri from F. H. Hunter, Tropical Africa, etc. But none the less are we pleased to receive the species that have been named, but which were imperfectly known, such as Cordyceps sobolifera from S. Kawamura, Japan, Hypoxylon cerebrinum from J. B. Hart, Trinidad, Ganodermus umbraculus from J. Gossweiler, Africa, Seismosarca hydrophora from J. B. Cleland, Australia, Daldinia angolensis from T. Hunter, Tropical Africa, etc. Rarely a collection comes to hand that we do not find something of interest, but it is by no means the "novelties" that are of the most interest.

RARE OR INTERESTING PLANTS RECEIVED FROM CORRESPONDENTS

POLYPORUS (AMAURODERMUS) SALEBROSUS, FROM W. SMALL, AFRICA. This was published in 1912, Letter 42, specimen from Hyac Vanderyst, Congo Belge. It is the second collection received, and is a much better collection than the types. The species of the section Amaurodermus are rare and most of them are known only from the type collections. We are therefore much interested whenever we receive one.

Polyporus salebrosus, as shown by this fine collection, varies from an inch to four inches in diameter, with a slender stem from 6 to 8 inches. The stem which has a dull surface is deep rooting (4 inches in one specimen), and probably proceeds from a rhizome. I have often thought that the earth-growing species of tropical Amaurodermus and Ganodermus proceed from rhizomes, but it has never

Fig. 1036.
Polyporus salebrosus.

been proven, as collectors usually just "pull them up." The surface of the pileus is dull, unicolorous, or with a few darker zones. The spores of this species are exceptional in the group. Usually they are deeply colored, but in this specimen so faintly colored, that if we did not know the relations of the plant we might suppose them hyaline. We present a photograph of a medium and a small sized specimen of this fine collection from Mr. Small, and also a figure showing the rooting base of a stem.

URNULA CAMPYLOSPORA, FROM J. B. CLELAND, AUSTRALIA.—We include this under the name as found in Cooke's Handbook where a good figure (165) of it is given. According to Massee, who also gives a good figure of it (Jour. Linn. Soc., Vol. 31, Pl. 16, f. 17), Berkeley named it four different times, and it is found in Saccardo under four different genera, as follows: Macropodia campylospora, Geopyxis cinerea-nigra, Rhizina reticulata, and Peziza rhytidia. We have not done enough work with this class of plants to have definite ideas of generic distinctions, but we believe it is cogeneric with our common Urnula Craterium. It seems frequent in Australasia.

Fig. 1037.

POLYSTICTUS ADUSTUS, FROM MRS. SUSAN TUCKER, WASHINGTON (Fig. 1038).—Pileus thin, sessile, dimidiate, growing imbricate. Surface minutely pubescent, adustus, sometimes with a

Fig. 1038.

dark reddish brown zone at base. Context white, stupeus. Pores minute, round, with white tissue, and usually adustus mouths.

The nearest ally of this species is Polystictus hirsutus, notwithstanding the entirely different surface. It has the general bearing of a thin Trametes.

POLYSTICTUS (SECT. PELLOPORUS) LIGNICOLA, FROM REV. C. TORREND, BRAZIL (Fig. 1039).—Entire plant cinnamon brown, 2 to 3 inches in diameter (one specimen sent 7 inches in diameter), mostly pleuropodial, rarely mesopodial. Stipe 1-2 inches, solid, covered with short cinnamon tomentum. Surface hard, rugulose. Context thin, concolorous. Pores rigid, with thin walls, medium 2 to mm. round or somewhat elongated. Mouths and pore tissue concolorous. Hymenium velutinate with subhyaline projecting hyphae, somewhat colored, but without the true setae of similar species. Spores not found.

Fig. 1039.

The feature of the species is the rigid, trametoid pores, hardly suggesting other plants of this section (Pelloporus 37a) where we would classify it. The plants are lignicoline, differing in habits from others of the section. Rev. Torrend kindly suggests, in sending it, the name Pelloporus Lloydii, which we are unable to use in keeping with rules we made some years ago.

STEREUM FRUSTULOSUM, FROM W. SMALL, AFRICA (Fig. 1040).—This species occurs very commonly in the United States and Europe, and I have it from Japan. With us it always grows on hard, oak logs that are but little decayed. It is resupinate, tubercular, as if broken into little pieces, hence the name. Our figure 1041 gives an accurate representation of it that can not be confused. Fries describes it as date brown, and so I found it in Sweden, but with us it has usually brown context and white hymenium. The

Fig. 1040.

statement in the books that it is "pulverulent with cinnamon spores" is an error, for the spores are hyaline. They measure about $3\frac{1}{2} \times 5$. Everyone seems to have known Stereum frustulosum, excepting one German writer, Hartig, who gave an excellent account of the peculiar way in which the fungus affects the wood, but who called it Thelephora perdix. No wonder the English author who translated the book

Fig. 1041.

states "it is not known as British." It is known as British very commonly, but not as Thelephora perdix. And this has not been corrected even in as late a book as Saccardo, Vol. 20, 1911. Stereum frustulosum has peculiar cystidia. They have little spiny processes, as shown on our figure 565 of Letter 51 of an Australian species. I do not know, but presume they have been noted before in connection with this species.

We have from W. Small, Africa, a form of Stereum frustulosum (Fig. 1040), which forms a continuous layer, with a few cracks, but not broken into little frustules, as the plant always is with us. With the same peculiar microscopic features, and the same peculiar method of attacking the wood (Fig. 1042), there can be no question of the identity of the fungus.

Fig. 1042.

POLYSTICTUS BAURII, FROM W. SMALL, AFRICA (Fig. 1043).—Pileus alutaceous, glabrous, tapering to a short dilated, glabrous stipe. Pores minute, alutaceous. This is another case where we fit a plant to an old description, when no specimen is known, rather than to propose a new name. The plants answer the descrip-

Fig. 1043.

tion fairly well, excepting that the plants evidently did not grow horizontally, but they might do so. They came from the same country, and it is better to put an old name into use than to propose a new one. In this sense Polystictus Baurii belongs to Section 13 of our Stipitate Polyporoids.

POLYSTICTUS VIBECINUS, FROM W. SMALL, AFRICA (Fig. 1044).—We disposed of this species in our Stipitate Polyporoids as "No type exists. From description it is close to grammocephalus." We have resurrected the name and apply it to this plant, which is better than to propose a new name, though, of course, it is not certain. It came from the same country, however, and fits fairly well the description.

Fig. 1044.

Pileus alutaceous, with a smooth, striate surface. Stipe lateral, short, dilated, of a soft texture, and the substance seeming to overflow

the base of the pileus. Pores minute, alutaceous. It is the first time we have seen the species. So many of Fries' African specimens have disappeared, that the only thing to do is to fit the names to the species where they fit the best. It belongs, however, in Section 22 of my pamphlet, not the grammocephalus section. The specimens disagree with the description, for pores do not extend to base of stipe, but in one of the specimens there is an indication of pores on the stipe.

POLYPORUS UNITUS, FROM W. SMALL, AFRICA (Fig. 1045).—Pileus infundibuliform, thin, fleshy, dark reddish brown. Surface glabrous, unicolorous, slightly striate, ridged. Stems several from a rooting base, brown, about an inch long, united above to form one perfect pileus. Pores fleshy, dark, small, but usually elongated. Cystidia none. Spores abundant, compressed globose. 10 x 12, hyaline, smooth.

Fig. 1045.

This is based on a single specimen, and it is difficult to believe that it is the usual manner of growth. If we knew any species from which it could be derived, we should consider it an accidental growth. But it seems peculiar that it should send up several stems from a rooting base, which produce one perfect, infundibuliform pileus. It seems that is the character of the species. It sometimes happens, when two different plants grow contiguous, that the pilei fuse, but generally clearly show the line of joining. This plant with several stems (5) from one root, forms a single, perfect pileus, with no marks or indications of not being one plant. The species is entered in our Section Lentus 45c.

PTYCHOGASTER LUCIDUS, FROM REV. C. TORREND, BRAZIL (Fig. 1046).—We do not know that Polyporus lucidus ever takes, in temperate regions, a Ptychogaster form, but Rev. Torrend sends the normal, tropical form, with the Ptychogaster form growing from the same mycelium. We gave in Mycological Notes, Polyporoid Issue, No. 2, page 31, an account of Ptychogaster albus, which in Europe is the most frequent Ptychogaster known. No one has explained why or under what conditions the Ptychogasters are formed. All that is known is that certain specimens, instead of developing the normal spores, and basidial spores, produce in great quantities conidial

spores, borne direct from the hyphae, and that the pores are obliterated. Sometimes these spores are borne in such numbers that the specimen is simply a mass of spore powder, with not enough hyphae

Fig. 1046.

to hold them together. The shape of these spores is never, as far as I know, the same as that of the normal spores. In this form, Ptychogaster lucidus, they are deeply colored, globose, smooth and vary in size from 4 to 12 mic. Hardly any two are the same size.

GEOGLOSSUM HIRSUTUM, FORM DEPAUPERATUM, FROM J. UMEMURA, JAPAN (Fig. 1047).—This is a little form, hardly a cm. high, growing on dry ground in moss. Notwithstanding its small size and different habits, I should prefer to refer it as a form of Geoglossum hirsutum. The spores (colored, 110 mic. 15 septate), paraphyses, and setae are the same. Geoglossum hirsutum is our most frequent species in the United States, but with us I do not know it to take this depauperate form. The photograph we present was made in situ by Mr. Umemura.

Fig. 1047.

POLYPORUS CONCHATUS, FROM P. VAN DER BIJL, SOUTH AFRICA (Fig. 1048).—Largely resupinate, but with reflexed pileus, conchoid. Color (also of context) pinkish buff. Surface dull mat. Pores medium, round or elongated on portion growing vertical. Cystidia none. Spores abundant, 4-5 x 8-10, hyaline, surface uneven.

Fig. 1048.

This belongs in Section 91 of the Apus Polyporus, and closely related to Polyporus rugoso-porus. The color is entirely different.

MYCOLOGICAL NOTES.

BY C. G. LLOYD.

No. 50.

CINCINNATI, O. OCTOBER, 1917.

P. A. KARSTEN

MYCOLOGICAL NOTES

Issued by C. G. LLOYD.

224 West Court Street, - - CINCINNATI, OHIO.

SUBSCRIPTION PRICE.—A little personal interest on the part of the recipient in picking up and sending to my address, specimens of the larger fungi. All are desired excepting specimens of fleshy Agarics. Simply dry the specimens and send them in.

P. A. KARSTEN

Through the kindness of Lars Romell we are enabled to present to our readers a photograph of Professor Karsten, who died recently, April 22, 1917. Professor Karsten was born in 1834 and he was in his 83d year at the time of his death. The photograph which was procured for us by Mr. Romell from Dr. K. Starbäck was taken some fifteen or twenty years ago, or perhaps longer.

Karsten has been very active in the study of fungi and was a practical field collector. He has written a great deal on the fungi of Finland, most of it systematic. In his earlier works he followed the classification of Fries, and personally, we think, it is unfortunate that he did not so continue until the end. However, like a few others, he imagined that he could get up a classification that would supplant Fries, but I think it was a failure and that but few mycologists pay any attention to it. It is unfortunate that men like Karsten, Quélet and others, who were the most active field workers and attained the best knowledge of their local plants, should have lessened the value of their work by attempting to impose a lot of useless names in which no one else is interested Karsten collected in practically the same region as Fries and had he been content to work as a commentator and illustrator of Friesian plants, his work would have been of great value, for Karsten had the advantage of the use of the microscope, which Fries never employed to any extent.

Karsten's work has been very useful in adding to the knowledge of the plants of that region, not only by his publications, but by his exsiccatae, which are found in almost every museum of Europe. He was evidently a very active collector and student.

We wish to extend our thanks to Mr. Lars Romell and through him to Dr. Starbäck for the loan of the photograph. It is perhaps well to state that our photo-engraving being an enlargement, has a rugged and unpolished appearance, due to the enlargement, but the features of the original are well presented.

THE VARIATIONS OF POLYSTICTUS VERSATILIS

One must learn Polystictus versatilis by familiarity with it, by handling it. By drawing the line closely a half dozen "species" could be made of it. Like most fungi it is a widely distributed plant. We have it from Alabama (1), Brazil (7), Cuba (1), Nicaragua (2), Straits Settlements (1), Madagascar (2), Java (2), India (1), Japan (2). It was named from the Philippines, and hence the "type form" occurs in the East. This form (Figs. 1049 and 1050) generally has large, thin, elongated pores and their color is purplish, sometimes quite dark. But the color of the pores varies and we have collections with no purplish cast, but tending to ochraceous. The pores are always thin walled, and rarely the walls are prolonged, becoming somewhat irpicoid.

Fig. 1049.

In the American tropics the plant sometimes takes the Eastern form, but usually has smaller pores (Fig. 1051). Rarely the American plant has the pores elongated. The species is light weight, and made up of loose hyphae. The upper surface, usually pale, is always strongly hispid. The hymenium has hyaline, fusoid, thin walled cystidia, often capitate, but this feature varies, and often the projecting hyphae of the hymenium are longer, slender and not specialized. Notwithstanding the variation of Polystictus versatilis it is easily recognized when one knows it, but the only way to learn it is to become familiar with it.

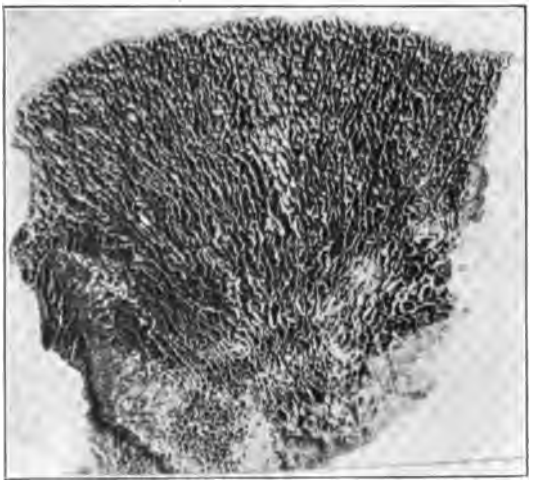


Fig. 1050.

HISTORY AND SYNONYMS.—This frequent species seems to have been first collected in the Philippines and distributed by Cummings (2026). It was named Trametes versatilis by Berkeley, and the same collection called Trametes cilicioides, by Fries. It was also called, from a Philippine collection, Hexagona ciliata, by

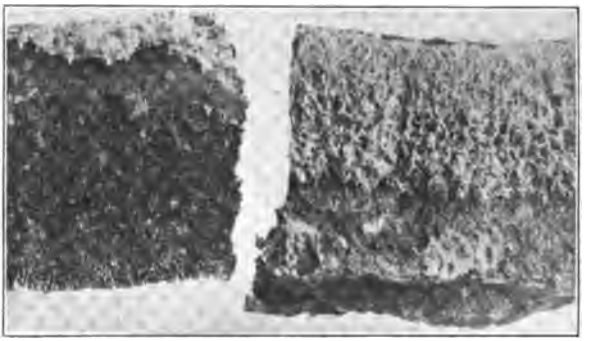


Fig. 1051.

Klotzsch. It was referred by Léveillé to Polystictus fimbriatus and named by Berkeley from Cuba, Polystictus cladotrichus, and from Ceylon (a denuded specimen) Polystictus venustus. Spegazzini named it Polystictus Hariotianus and also referred it to Polystictus Drummondii, which Bresadola in "honor" of his mistake named Polystictus Spegazzini, and afterward acknowledged it. Zollinger's Java collection (1386) on which Léveillé based Trametes Zollingeriana is this species. Murrill misreferred the American plant to Polystictus villosus, but he got it right from the Philippines. So while Polystictus versatilis is a variant species, it does not present as much "variation" as the fellows who have named it.

NOTES ON AUSTRALIAN PHALLOIDS

PSEUDOCOLUS ROTHAE (Fig. 1052).—Through the kindness of Dr. J. Barton Cleland, we present herewith drawings of Pseudocolus Rothae, which were made by Phyllis Flockton-Clarke and are evidently so accurate and so characteristic that they answer the purpose as well as a photograph. Pseudocolus Rothae has been imperfectly and inaccurately known before, and we are glad to get such characteristic figures. From the appearance of the figure it could be classed in the genus Laternea, but as we understand it, the columns are consolidated into a stem at the base contained in the volva. The genus Pseudocolus is only a stipitate Laternea. There are rare records of Laternea columnata occurring in Australia. It is a very common species in the American tropics, but it is not known from Australia, and it is probable that the Australian record is based on Pseudocolus Rothae.

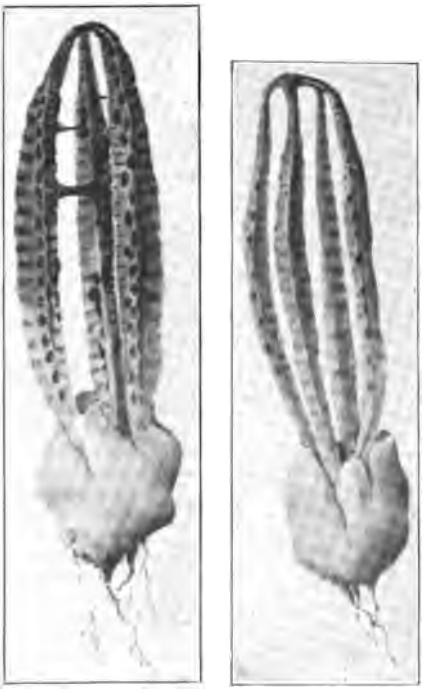


Fig. 1052—Pseudocolus Rothae.

COLUS HIRUDINOSUS IN AUSTRALIA.—We have received from Dr. J. Barton Cleland a very fine drawing of Colus hirudinosus, which was made by Phyllis Flockton-Clarke (Fig. 1053). The drawing is so characteristic that there can be no question of the occurrence of Colus hirudinosus in Australia. Its authentic occurrence there is of great interest in the distribution of phalloids, for heretofore it has only been known from the Mediterranean regions. Dr. Cleland informs us that it is a very rare phalloid in Australia and only known to him from two localities, Milson Island, Hawkesbury River, and Byron Bay, both located in New South Wales, but about 300 miles apart. The history of Colus hirudinosus in Europe is rather interesting. It was first found on the Island of Corsica, growing in manured places and on manure, but it was later found by Rev. Torrend, in Portugal, growing in the sand and in unmanured places. It is not known from other sections than the Mediterranean regions and from New South Wales.

We should like very much to see a photograph of this Australian plant, for the drawing is not exactly the European plant.

Fig. 1053.
Colus hirudinosus.

THE GENUS PYRENOPOLYPORUS

Fig. 1054.
Pyrenopolyporus Hunteri.

A most curious genus reached me from T. Hunter, Africa, viz.: a Pyrenomycete simulating a Polyporus. When I first saw it I thought it was a Polyporus belonging to the section 93 Apus Polyporus, although I could not account for carbonous context in a Polyporus.

PYRENOPOLYPORUS.—Stroma pileate, with a smooth surface, and carbonous tissue simulating the pileus of a Polyporus. Growing horizontal, sessile, attached with a small attachment. Perithecia contiguous, forming a layer on the *under side* of the stroma and simulating the pores of a Polyporus.

PYRENOPOLYPORUS HUNTERI (Fig. 1054).—Stroma (pileus) 3-4 inches in diameter, a cm. thick, sessile horizontal, black, with an even, dull, upper surface. Context black, carbonous. Perithecia contiguous, carbonous, forming a layer 2 mm. thick on under surface of the stroma.

Fracture of the perithecia glaucous to the eye. Mouths covered by a thin, carbonous layer. Asci not seen, probably evanescent as in the genus Camillea. Spores 6 x 12, colored, guttulate when young, resembling the spores of Hypoxylon and Xylaria.

Fig. 1055.

We present a photograph of the top of the pileus of a half specimen, also an enlargement (Fig. 1055) of a section showing the layer of perithecia. There is no genus heretofore known to which this can even be compared.

Type from T. Hunter, Africa (No. 71).

We have also from Mr. Hunter what appears to be a resupinate part of this plant. If this has reached Europe it has probably been named as Nummularia, a genus that we have not looked up in detail. But Nummularias grow on top of logs with the hymenium up, and Pyrenopolyporus when resupinate must grow on the under side of logs, with the hymenium facing the ground. This, to my mind, is an essentially different, generic idea.

RARE OR INTERESTING FUNGI RECEIVED FROM CORRESPONDENTS

POLYSTICTUS CONGLOMERUS, FROM CHAS. C. PLITT, BALTIMORE (Fig. 1056).—Pileus, thin, rigid, developed from a hard, white, conglomerate, myceloid base. Surface unicolorous, between isabelline and honey yellow, velvety with soft hairs, faintly zoned. Pores minute, rigid, alutaceous. Spores 3 x 5, hyaline.

Fig. 1056.
Polystictus conglomerus.

The feature of this plant is the method of development from a conglomerate base, unknown to me in any other species. The rigid pileus and pores point to Trametes, but it is customary to refer such thin plants to Polystictus. In grouping it we would put the species in the same section as versicolor. The specimens were sent to Mr. Plitt by Dr. H. E. Hone, from California.

ISARIA JAPONICA, FROM PROF. A. YASUDA, JAPAN (Fig. 1057).—As named by Prof. Yasuda. To the eye this is so similar to Isaria farinosa, our most common species, that our figure (1057) could be taken for either. The spores are different—2 x 4–5 reniform, curved, in the Japanese plant, 1½ x 5 straight in our species. Isaria farinosa is known to be a conidial form of Cordyceps militaris, which species is unrecorded in Japan. I hope Prof. Yasuda may be enabled to correlate this Isaria with its Cordyceps form in Japan.

Fig. 1057.

LASCHIA INTESTINALIS

(Or Poroauricula intestinalis, as it may be called.)

This must be a rare plant as this is the first specimen or record I have seen, excepting the type at Kew. It was originally from India, named seventy years ago as Favolus intestinalis and still so found in Saccardo. Certainly it is not a Favolus which does not have gelatinous texture and is not a true Laschia in the present sense. The basidia appear to me to be of the "pluriloc-ular" type and it is related to "Auricu-lariella" section in Saccardo, Vol. 6, page 407. This section comprises now three "species" (all of which are the same, "Laschia" delicata) and really a different "genus" from this. In "Laschia" delicata the hymenium is universal over a folded surface. Laschia intestinalis has definite pores like a Hexagona, and the hymenium is on the sides of the pores only. The bottom of the pores is sterile. We do not like to multiply the genera, but McGinty proposed for it Poroauricula. We present a photograph (Fig. 1058) of the type at Kew, the only specimen heretofore seen by us. Specimen from E. D. Merrill, Philippines (Luzon, H. S. Yates, 25824). We believe it has not been previously collected in the Philippines.

Fig. 1058.

"Laschia" delicata, a very similar plant, but with folds instead of pores, is frequent in tropical countries. It is better called Auricularia delicata.

AN INTERESTING SCLEROTIUM FROM REV. BOUTLOU, WEST VIRGINIA (Fig. 1059).—What is undoubtedly the sclerotium of some fungus was sent me in quantity by Father Boutlou. It grew in manured places, and as shown in our photograph, sometimes reaches a diameter of an inch. The surface is smooth and black and the context hard and white.

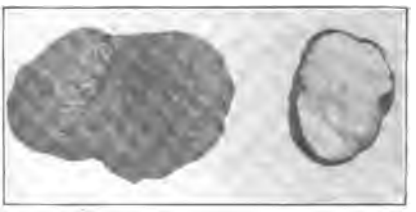


Fig. 1059.

There are in the tropics several species of fungi that are known to be produced by sclerotia. The best known species are the Lentinus Tuberregium (Cfr. Myc. Notes, page 666), Polyporus sacer in Africa (Cfr. Stipitate Polyporoids, page 122), Polyporus tuberaster in Europe (Cfr. Stipitate Polyporoids, page 166), and several others. We do not, however, as far as known, have in the United States any species of fungus

developed from a large sclerotium, although there is an unnamed species of Lentinus in the arid region of our southwest.

A number of very complete papers on the sclerotia of Europe have been published by Léveillé, Bommer and others, and in looking them over I do not find any description that seems to apply to Father Boutlou's specimen. While the specimens grew in the ground under a manure pile, they are undoubtedly the sclerotia of some manure loving species. I only recall one in this connection, namely, Coprinus stercorarius, but that proceeds from sclerotia not larger than peas and can not possibly be these specimens. We hope that Father Boutlou will succeed in growing a fungus from the sclerotium and solve this interesting mystery.

ASTEROSTROMA EPIGAEUM, FROM PROF. A. YASUDA, JAPAN (Fig. 1060).—Resupinate, growing on bare ground. Thick, hard, woody. Context brown, of densely woven, dichotomously branched hyphae, with divaricate, spiny tips (hence Asterostroma for me, Asterostromella for v. Hohn. but probably Stereum for any one else). Cystidia none. Spores abundant, globose, 5-6 mic., minutely rough and I believe with a faint tinge of color, but almost hyaline.

Fig. 1060.

This species resembles to the eye Stereum duriusculum, but has brown context and isabelline surface. It would be classed in the Friesian system in the genus Stereum.

LENZITES TENUIS, FROM PROF. A. YASUDA, JAPAN (Fig. 1061).—This was named by Léveillé from Guadaloupe and the specimen is at Paris. It was recently named Lenzites Earlei from Cuba. The character of the plant is the narrow, close, crisped gills (Fig. 1061). The West Indies plant is white and glabrous, and this

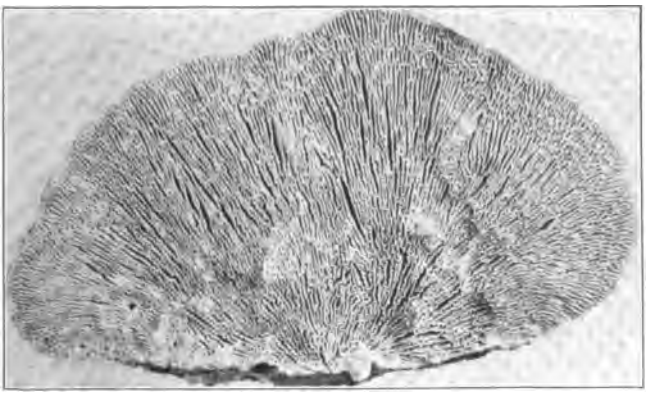


Fig. 1061.

Japanese collection has a minutely downy surface and a faint, pinkish

surface color, hence not exactly the same, but too close for a new name, I believe. There was a "Daedalea tenuis" named by Berkeley from the East, which is really a Lenzites, and as it is yellow, and same as Lenzites flavida (and about forty other names) it should not embarrass the use of Léveillé's name for this white species. Lenzites tenuis is a rare plant in the West Indies, and I have heretofore only known it from the *two* "type localities."

TRAMETES SENSITIVA, FROM PROF. A. YASUDA, JAPAN (Fig. 1062).—Resupinate, irregular, thick, rigid, probably pileate when well developed. Surface and the crust reddish brown. Context and pores pure white, unchangeable in drying. Pores minute, rigid, round. Cystidia none. Spores not found.

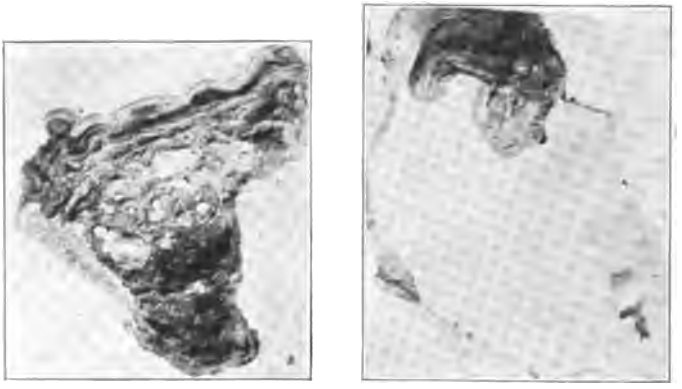


Fig. 1062.
Trametes sensitiva.

This reminds me so much of Trametes incondita (of South Africa, Cfr. Myc. Notes, page 551, Fig. 756) that until I compared them I thought it was probably the same. It has the same irregular, indefinite habits of growth. It is the second polyporoid, known to me, with a marked chemical test. (The other is Polyporus rutilans.) When Trametes sensitiva is touched with an alkali, it changes at once to red, which color shortly disappears.

DUCTIFERA MILLEII, FROM REV. LOUIS MILLE, ECUADOR.—The genera of Tremellaceae are not all defined. Since the microscope came into use, they are based on the basidia. These were first clearly pointed out by Tulasne, but as he was a student and not an inventor of names, it was left for subsequent savants to propose names based on the features that Tulasne demonstrated. Brefeld went into the basidia and structure of tremellaceous plants in the greatest of detail. We have in the United States and South America, and no doubt other countries, tremellaceous plants with structural features not known as to European species. The most

marked feature is that of species that have large, colored imbedded ducts. This is the third species that has come to my notice. (Cfr. Seismosarca hydrophora, Myc. Notes, page 629, Seismosarca alba, as Exidiopsis, Note 48.) The two previous have globose, cruciate

Fig. 1063.

Fig. 1064.

basidia. This has cylindrical basidia, hence must form a "new genus," for it would not do nowadays to put tremellaceous plants with different types of basidia in the same genus.

DUCTIFERA.—Gelatinous, foliaceous or cerebrine. Hymenium amphigenous. Basidia cylindrical. Gloeocystidia deeply colored, imbedded ducts. Spores hyaline, curved.

DUCTIFERA MILLEII.—Gelatinous, when soaked out pale brown, but drying darker, cerebrine, lobed. Tissue of fine hyaline hyphae. Ducts (Fig. 1065) deeply colored, 6-8 mic. thick, irregular, often broken, dense near the surface, forming a cortical portion. Basidia not clearly made out by me, but no doubt cylindrical.* Spores 6 x 12 hyaline, guttulate, curved.

Fig. 1065.

This grew on rotten wood near Quito, Ecuador (Rev. Mille No. 4). In coloration it is about the same as Tremella frondosa, in form Tremella mesenterica, but in structure it does not accord with any other species known to me.

We present two figures natural size. Fig. 1063 is the plant soaked out; Fig. 1064 is the dried plant as received.

*NOTE.—Of the three types of basidia found in tremellaceous plants the globose, cruciate and the furcate are always readily seen and easily found. The third type, cylindrical, septate, we have never been able to clearly see, as shown in the figures. We see indefinite, cylindrical bodies, no doubt the basidia, but although we have tried often, we have never clearly made out the sterigmata nor the septation (excepting in Platygloea cfr. Note 263), but it is a safe proposition if one does not find the basidia to be of the first two types, they belong to the third type.

HORMOMYCES AURANTIACUS, FROM REV. A. BOUTLOU, WEST VIRGINIA.—Applanate, tubercular, soft, gelatinous, drying hard, cartilaginous. Color scarlet (Ridg.). Entire fungus seems to be composed of branched chains of catenate spores (Fig. 1066). It was named and figured by Bonardon who described it as orange, and gave a characteristic figure of its spores. The American plant was called Hormomyces fragiformis by Cooke, apparently on account of its "purple" color rather than orange, but "purple" in sense of Cooke is scarlet of Ridgway. I have collected it both in Europe and the United States and both are of the same color, and no doubt the same species, and also doubtless the South African species, Hormomyces callorioides, described as "rose" color. The plant has the appearance of the plasmodium of some Myxomycete.

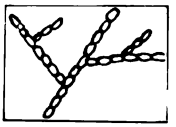


Fig. 1066.

Saccardo classes it with tremellaceous plants, suggesting that it is the conidial state of some Dacryomyces, and Patouillard and Hennings take the same view. I think there is no basis for that, for there is no species of Dacryomyces of the same color, nor are there any other tremellaceous plants known with similar spores. No one ever found it that it did not have these catenate spores, and until something more is known about it, I should consider it an autonomous species.

STEREUM ATROPURPUREUM, FROM MISS MARGARET L. FLOCKTON, AUSTRALIA (Fig. 1067).—Sessile, dimidiate, thin, rigid, with a thick coat of dark, purplish tomentum. Hymenial face smooth, dark (almost black). Basidia unknown to me, hence it is not possible (for me) to refer it to a genus (Cfr. Myc. Notes, page 680).

Fig. 1067.

About two-thirds of a section is made up of loose, coarse, colored hyphae, which are really the tomentose covering, and one-third of very fine, pale (notwithstanding the hymenial face appears dark to the eye) colored hyphae (cartilaginous tissue), bearing abundant small conidial spores. I do not know, but I do not doubt that it belongs to the same "genus" as "Stereum" lugubre, whatever that may be. (Cfr. Letter 46, page 7.)

There are at Kew two collections from Malay. The first was called "Stereum aterrimum" by Cooke, in 1884, and the second called "Stereum aterrimum nov. spec." by Massee, in 1899. I did not section either one of them, but judging by the eye, I thought they were the same, and they are probably the same as this plant from Australia, although (at present) both the Malay plants are well named "aterrimum" and this plant is distinctly purplish.

IRPEX VERSATILIS, FROM MISS MARGARET L. FLOCKTON, COLLECTED BY P. F. CLARKE, AUSTRALIA.—Pileus

dimidiate, thick, rigid. Surface hirsute, strigose (denuded in Fig. 1068). Context brown. Teeth mouse grey, irregular, tubercular, somewhat daedaloid. Basidia hyaline, forming a palisade layer. Cystidia similar to basidia, but longer, hyaline, thick walled, smooth. Spores 4 x 8, hyaline. The subhymenial hyphae are deeply colored.

Fig. 1068.

The general position of the plant is doubtful. It is perhaps a better Radulum and it might be called Daedalea. While I would not suggest that it is a variant of Polystictus versatilis, I am satisfied that there is some relation between the two plants that I can not explain.

FOMES SETULOSUS, FROM MISS MARGARET L. FLOCKTON, COLLECTED BY MR. BLAKELEY, AUSTRALIA. (Compare Synopsis Fomes, page 243.) The presence or absence of setae on the hymenium is usually considered of specific importance in the Fomes with brown context. Indeed in our Synopsis of the genus, we grouped the species on this character. Species that have setae like Fomes conchatus, Fomes torulosus, Fomes Everhartii, Fomes senex, etc., seem to always have them. Others, like Fomes ribis, Fomes fomentarius, never have setae.

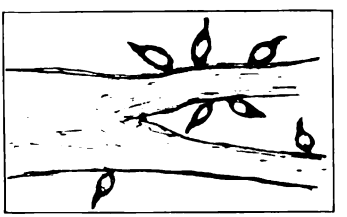


Fig. 1069.

But we are convinced that Fomes robustus of Europe and the United States is the same species as Fomes setulosus of Ceylon and Australia, although with us the species never has setae to my knowledge. From Australia we get collections sometimes without setae, sometimes with a few setae, and sometimes with abundant setae (Fig. 1069) as in the specimen just received from Miss Flockton. In every other feature the plants are the same, and we believe are in reality the same species.

There are other similar cases. Thus Fomes Yucatensis is for me Fomes rimosus with setae, but we never find setae on the common Fomes rimosus in the United States. In interpreting the "species" of nature, it does not do to lay down any rigid laws. Nature makes her own laws. It seems that in some species which vary in presence or absence of setae, the setae are absent from specimens of temperate countries, and often present in those of warm countries.

FOMES OCHROLEUCUS, FROM J. T. PAUL, AUSTRALIA (Fig. 1070).—We considered this plant in our Apus Polyporus pamphlet as Polyporus, stating that sometimes it takes "Fomes" forms. This specimen from Mr. Paul is a true Fomes with nine annual layers distinctly shown. The plant can never be mistaken from its abundant large, truncate, hyaline spores. The older portion of the plant has turned black, which is a feature of the species as we have published. The shape of the specimen is narrow, ungulate, cuneate. We saw at Kew a New Zealand collection with white context and this peculiar shape, and on it we based Fomes cuneatus (Fomes Synopsis, page 217). We did not find spores, which is strange, if it is the same species as this, which it may be. This species must not be confused with Fomes ochrolaccatus, another peculiar species recently found in Australia.

Fig. 1070.

HEXAGONA CRASSIPORA, FROM T. HUNTER, AFRICA (Fig. 1071).—Notwithstanding its very remarkable pore forms, I look upon this as a variation of Hexagona speciosa. There seems to be in Africa a group of species (or forms) with the following essential characters. Surface smooth, faintly zonate. Context color Dresden brown to Cinnamon brown. Pores glaucous, without setae or cystidia. The original of this group was named from Africa, Hexagona speciosa (Cfr. Hexagona pamphlet, page 21). The collections differ, thick 1-1½ cm. to thin ½ cm. and in the pore sizes (Cfr. Hexagona Smallii). I never saw a Hexagona before with pores like this specimen (Fig. 1071), received from Mr. Hunter. With their thick walls and irregular sizes, they remind one more of cavities in the context rather than definite pores. Since this specimen has been received from Mr.

Hunter, we have gotten a second collection (No. 75). This, while it has thick pore walls is not markedly different from the usual Hexa-

Fig. 1071.

gona pores, and is a connecting link between Hexagona crassipora and the normal Hexagona speciosa.

IRPEX PURPUREUS, FROM JAPAN, AS NAMED BY PROF. A. YASUDA (Fig. 1072).—Pileate from an effused base. Pileus purplish brown, with soft, appressed, fibrillose surface. Teeth slender or deformed, irregular, often compound. Sometimes near the margin deformed and reduced to Radulum-like tubercules, dark purplish brown, velutinate to the eye. Cystidia dense, hyaline, smooth, mostly blunt, 5-7 mic. thick. Spores (if correctly seen) globose, hyaline, smooth, 5-6 mic.

Fig. 1072.

The character of the species is the velutinate, purplish hymenium, reminding one of the hymenium of Stereum membranaceum. We present a photograph (Fig. 1072), showing the general habits of the plant.

IRPEX LAMELLIFORMIS, FROM J. UMEMURA, JAPAN (Fig. 1073).—We have gotten this plant several times from Japan, viz.: J. Umemura, J. E. A. Lewis, H. Miyabe, T. Yoshinaga, and perhaps others. We misreferred it to Irpex Noharae (Cfr. Myc. Notes, page 601) from our record, but on a recent visit to New York we again examined the type of Irpex Noharae and found it different. There are three species in Japan with lamelliform teeth, and it is

curious that we do not know this type of Irpex teeth excepting in Japan.

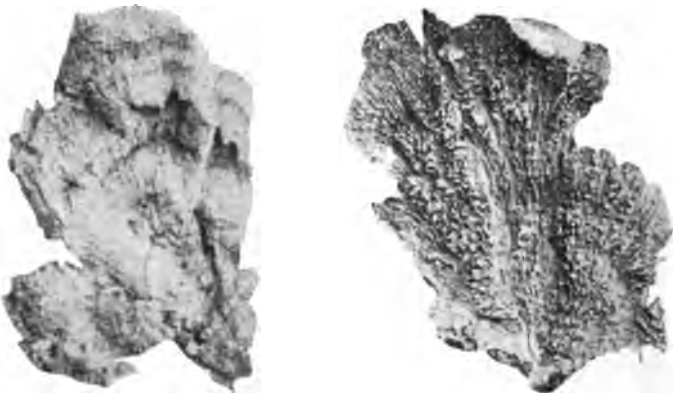


Fig. 1073.
Irpex lamelliformis.

Irpex lamelliformis has the teeth arranged in lines (lamelliform), in fact it might be classed as an irpicoid Lenzites. The whole aspect of the plant and coloration of the teeth, and the microscopic details remind one of Polystictus abietinus. There is an intimate relation between these two species, although the hymenial configuration is so different.

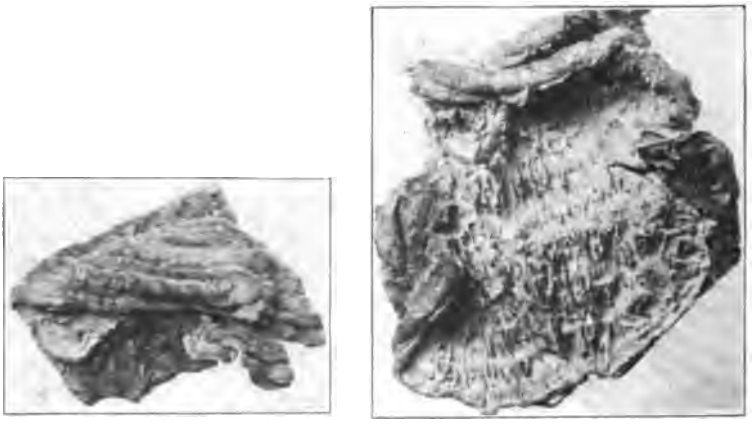


Fig. 1074.
Irpex Noharae.

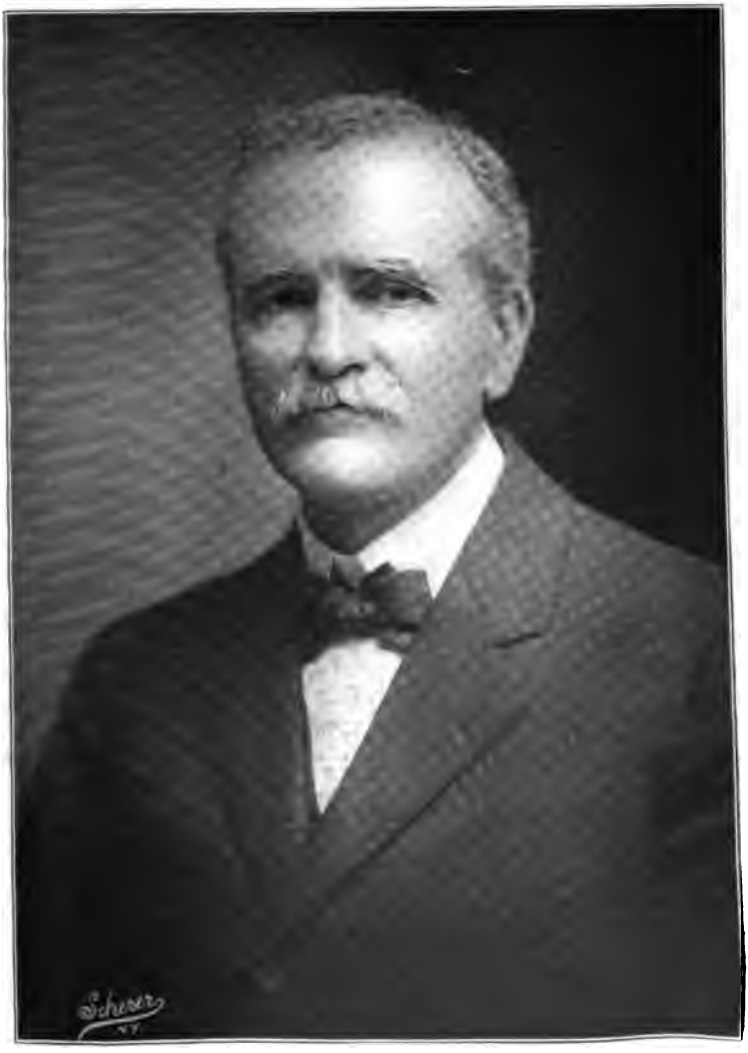
Irpex Noharae (Fig. 1074) to which we formerly referred it, differs in texture and surface, and coloration. The surface is more pubescent, on the order of Daedalea unicolor. The teeth are more rudimentary. It is evidently rare in Japan, for only known from the type collection.

MYCOLOGICAL NOTES.

BY C. G. LLOYD.

No. 51.

CINCINNATI, O. NOVEMBER, 1917.



FRANK H. AMES

MYCOLOGICAL NOTES

Issued by C. G. LLOYD.

224 West Court Street, - - CINCINNATI, OHIO.

SUBSCRIPTION PRICE.—A little personal interest on the part of the recipient in picking up and sending to my address, specimens of the larger fungi. All are desired excepting specimens of fleshy Agarics. Simply dry the specimens and send them in.

FRANK H. AMES

We present on the first page of this pamphlet a photograph of the late Frank H. Ames, who died in Cambridge, Mass., on August 1 of this year. Mr. Ames was a teacher the greater part of his life, and for the past twenty years was connected with the schools in Brooklyn, N. Y. He was an enthusiastic lover of nature and well informed on various branches of Natural History, but of course it is in connection with his study of Mycology that we came in touch with him. He was a fine collector and often sent to our museum a nice selection of the rare fungi.

He was born October 8, 1852, hence was in his sixty-fifth year. The photograph that we present was taken about ten years ago.

Mr. Ames published nothing on the subject, but was well informed on classification, and his specimens were always accompanied with critical notes that added much to their value. Although we did not know him personally, we feel a personal loss in his death.

Mr. Ames' name will be preserved in connection with the American fungi through Sebacina Amesii, that was published in Mycological Notes, page 576.

AN INTERESTING PHALLOID FROM CHINA

LYSURUS SINENSIS, FROM G. GISH GEE, CHINA.—The entire plant about three inches high. Stem fluted with five angles, about a cm. in diameter; hollow, composed of large, cellular tissues. Stem bearing five angular arms, which are connivant, but distinct from each other, except where they are united at the top into a tip about 2 cm. long.

The second foreign phalloid that was named is Lysurus Mokusin, which was published from China 137 years ago and crudely figured by Father Cibot, a Jesuit missionary, then located in China. The specific name refers to a Chinese province, and for more than a hundred years the world's knowledge of the plant rested on Father Cibot's

original account. In recent years the plant has been found in Japan and called Lysurus Beauvaisi, and we have a drawing of the plant made in Japan by Mr. M. Gono. Recently, also, it has appeared adventitiously in some warm houses in California. In addition there is one similar collection from Australia which was illustrated as Mutinus pentagonus, under the belief that the arms are united and consolidated into one piece. It is probable that when this Australian plant is again found, it will develop that it is the same species as Lysurus Mokusin.

Fig. 1075

Fig. 1076

In the original account and figure of Lysurus Mokusin by Father Cibot, the arms are shown and described as connivant, but as not united at the top. When we first received this plant from Mr. Gee, we thought it was the same species that had previously been illustrated from China, and although we noted that the arms are united into a tip, we thought that there was probably a discrepancy in Father Cibot's account. But on again going over his work carefully, we concluded that there is no possibility of Father Cibot's having overlooked this feature, and we concluded that the plant from Mr. Gee, with the consolidated tip, can not be the same species as the plant from Father Cibot without the tip. It may develop in time that we are mistaken in one or both of these assumptions, but until further is learned of the subject, we shall have to hold Mr. Gee's plant as distinct.

The specimen was received from Mr. Gee in alcohol and had the tip bent over as shown in one of our figures, but we presume that the tip is naturally erect, as shown in the other figure where it has been straightened out before photographing. In figure 1076 we give a section through the stem and section through the arms, and the tip of the plant showing how it is joined to the arms. The arms, as it will be noted from the section, are entirely distinct from each other and surrounded by the gleba.

We hope Mr. Gee will continue to observe the Phalloids of his locality, and from his observation we have no doubt that it will be decided whether there is one or two species of Lysurus in China. It is possible, of course, that the tip may be grown by some specimens and not by others, although that is not probable. Mr. Gee, by observation of the plants as he finds them, will be able to decide this point.

THE GENUS SEPTOBASIDIUM

SEPTOBASIDIUM PEDICELLATUM, FROM P. VAN DER BIJL, SOUTH AFRICA.—The genus Septobasidium is very imperfectly known as to foreign species. Recently the United States species have been carefully worked over by Prof. Burt and mostly named as "new species." They are very difficult to work with, for it is rarely

Fig. 1077
Septobasidium pedicellatum.

that they are found in fruit and there is little to go on except the general appearance, habits and color. We have but one common species in the United States named Septobasidium pedicellatum, or Thelephora pedicellata, as named by Schweinitz. There is no question in my mind as to the identity of Schweinitz species that he records as "frequent," for we all know in the United States what the frequent species

is. Prof. Burt would change the name on the strength of a scant specimen found in Schweinitz' herbarium, but as I look at it, that is basing nomenclature on accident rather than facts. Schweinitz' herbarium does not always represent Schweinitz' views as proven in a number of cases.

The genus Septobasidium is common, particularly in the tropics. It always occurs on living branches and is not saprophytic nor is it parasitic on the wood. It has been known for many years that there is some connection between species of this genus and scale insects. In fact it was mentioned by Fries, and Petch has recently stated that the earlier stages are parasitic on colonies of scale insects (Cfr. Note 42). The genus Septobasidium was named from the peculiar shape of the spore bearing organs, which are similar to those found in some of the tremellaceous genera. As a matter of fact, however, we feel confident as to a great many species of Septobasidium, of which we know nothing whatever about the basidia. Museum specimens are rarely fertile, and when they are it is a most difficult, microscopic problem to find the basidia. The tropical species of Septobasidium have never been separated. They are found in our literature, usually as Thelephora, but also as Daedalea, Hymenochaete, Hydnum, Corticum, Helicobasidium, etc.

I have a list of forty-six supposed species that I found in about a half dozen different genera in the museums of Europe, which, I venture, from their habits and appearance will eventually be classed in Septobasidium. We have in the United States two very similar species named Septobasidium pedicellatum and Septobasidium castaneum, which differ chiefly in color. Our common species is pedicellatum. Castaneum, which is a darker species, is of a more southern range. On comparison, Mr. Bijl's specimens are closer in color to pedicellatum than castaneum, but as a rule I think the specimens that I noted abundantly in the museums and which were by Berkeley referred to Thelephora pedicellata, mostly approximate Septobasidium castaneum in color. I think it will prove eventually that Septobasidium castaneum is the most common species of the tropics.

The following plants that I have (mostly) noted in the museums will finally, I believe, be classed as Septobasidium:

Septobasidium albidum, So. Amer., Patouillard, as Septobasidium.
" abnormale, Brazil, Hennings, as Corticium.
" atratum, West Indies, Patouillard, as Septobasidium.
" Bagliettoanum, Fries, Europe, as Hypochnus.
" bogoriense, Java, Patouillard, as Septobasidium.
" capnodes, Ceylon, Berkeley, as Thelephora.
" Cavarae, Europe, Bresadola, as Septobasidium.
" Carestianum, Europe, Bresadola, as Septobasidium.
" cinchonae, Java, Raciborski, as Septobasidium.
" coffeicola, Africa, Hennings, as Septobasidium.
" crinitum, Brazil, Fries, as Thelephora.
" dictyodes, Ceylon, Berkeley, as Thelephora.
" fisso-lobatum, Brazil, Hennings, as Hymenochaete.
" frustulosum, Cuba, Berkeley, as Hymenochaete.
" Henningsii, Java, Patouillard, as Septobasidium.
" humilis, Java, Raciborski, as Septobasidium.

Septobasidium Leprieuri, So. Amer., Montagne, as Corticium.
" lichenicola, Ceylon, Berkeley, as Thelephora.
" Michelianum, Italy, Calderi, as Hypochnus.
" Mompa, Japan, Raciborski, as Helicobasidium.
" paulense, Brazil, Hennings, as Septobasidium.
" protractum, Sydow, as Septobasidium.
" pteruloides, Montagne, as Hydnum.
" radiosum, New Guinea, Hennings, as Hymenochaete.
" rameale, Ceylon, Berkeley, as Lachnocladium.
" retiforme, Cuba, Berkeley, as Thelephora.
" rhabarbarinum, So. Amer., Montagne, as Daedalea.
" rubiginosum, Java, Patouillard, as Septobasidium.
" scopiforme, Brazil, Patouillard, as Septobasidium.
" septobasidioides, So. America, Hennings, as Hymenochaete.
" suffultum, Ceylon, Berkeley, as Thelephora.
" ussanguensis, Africa, Hennings, as Hymenochaete.
" velutinum, So. America, Patouillard, as Septobasidium.

The foregoing list is simply copied from my notebook of specimens in the museums. I have not confirmed it even as to the genera under which the species were originally named.

Thelephora spongia, Cuba, classed by Patouillard and Burt as Septobasidium, did not appear to me to be a fungus. I was told by a lichenologist at Kew that it is a lichen belonging to the genus Dichonema.

A NAUCORIA FROM A SCLEROTIUM

NAUCORIA SCLEROTICOLA, FROM REV. BOUTLOU, WEST VIRGINIA (Fig. 1078).—We gave in Mycological Notes, page 707, an account of a sclerotium found by Rev. Boutlou in the ground under some manure. It was of particular interest, as evidently the sclerotium of some fungus, and excepting some small sclerotia, we know of no fungus produced from sclerotia in the United States. Rev. Boutlou has just sent us an Agaric with this sclerotium attached, and it opens up another question as mysterious as the sclerotium was originally. Had the Agaric been sent to us separately, we should have said that it was the common Naucoria semiorbicularis, and now as we have them side by side we can not see any difference, excepting that Rev. Boutlou's plant is produced from a sclerotium. We will therefore not "describe" Naucoria scleroticola except to state that it is the same as Naucoria semiorbicularis produced from a sclerotium.

Fig. 1078.

No more common agaric grows than Naucoria semiorbicularis, and every wet season it comes abundantly in the lawns and pastures and manured places, and it is widespread. We have it from Japan, Australia, Samoa, and as to Europe it is as frequent as it is in the United States. We were puzzled for years as to whether Naucoria

semiorbicularis and Naucoria pediades were the same plant or not. Fries evidently called it Naucoria pediades when he found it growing, which he stated "vulgatissimus," but he also maintained semiorbicularis, distinguishing the former as convex, the latter as hemispherical, and by the color. Cooke gave illustrations of differently colored plants and transposed the colors, giving to semiorbicularis the color of pediades and to the latter the (reputed) color of the former. My work with the agarics in Sweden convinced me that it was Naucoria pediades of Fries, and then later when I found it in France I was convinced it is semiorbicularis, as was much better figured than named, by Bulliard. We have a feeling that Naucoria scleroticola is Naucoria semiorbicularis from a sclerotium, but we do not know whether the sclerotium is an occasional occurrence, or whether the plant habitually has sclerotia. If the latter, it is a strange oversight for mycologists to make for a hundred years for such a common species.

Father Boutlou wrote us, "all the Naucorias in my garden have sclerotia."

In a subsequent letter he advises, "since I wrote, the Naucorias have dried up and disappeared, the sclerotium has emptied itself and the hard skin alone is left."

POLYSTICTUS OBSTINATUS, MAXIMUS AND HIRTELLUS

POLYSTICTUS OBSTINATUS, FROM W. SMALL, AFRICA. We have gone over our specimens of this rather frequent species, in connection with Mr. Small's sending. It is an Eastern species and occurs in Java, Samoa, Philippines, Africa, but not in the American tropics. Mr. Murrill confused it with Polystictus maximus of the American tropics and his Philippine determinations under the latter name should be corrected to Polystictus (or Trametes) obstinatus, it being about as good a Trametes as it is a Polystictus. The context is always slightly colored, very pale in some Java collections, but usually about buff-yellow. In one collection that we have from Dr. Braun, German Africa, it is darker, about aniline yellow. When young as some of Mr. Small's collections, the surface is unicolorous, with a matted tomentum which partly disappears from older specimens leaving glabrous, bay zones. Old collections such as we made in Samoa, have smooth, hard, dark, indurate surface. As to the name we shall continue to use the name given by Cooke in 1883, although it is not possible that such a common plant could be a "new species" at such a late date. A species, of which 30 collections have been received by us in ten years, must have reached Europe before 1883. The old fellows must have had it although what they called it we do not know. Polystictus Meyenii, named by Klotzsch from Philippines in 1843, is said to be the same plant, though the type at Berlin is endorsed as being Polystictus occidentalis, and when we noticed it we thought this was correct. Trametes cornea, as named by Patouillard from China, is surely the same, if Roumeguére's distribution (supposed to be cotype) is correct.

There is an intimate relation between this plant and Daedalea Eatonii of South Africa, but we believe them to be distinct.

POLYSTICTUS MAXIMUS.—This plant of the American tropics is the analogue of Polystictus obstinatus of the East, but is not the same, I think, as has been held. The surface has similar, hirsute covering, which first takes glabrous, bay zones and finally becomes glabrous in very old plants. The context is always white. The pores are not so rigid and are disposed to become irpicoid when old. The spores, recently observed fresh in Cuba, are cylindrical, 4 x 12 straight. The whole plant is more flaccid than the Eastern plant, never takes the rigid Trametes form. This is a common species in American tropics. First called Polyporus labyrinthicus by Montagne, it was changed to Irpex maximus when Berkeley pointed out that it could not be the former. What Fries called it I do not know, but it is probably his Trametes cingulatum from Brazil.

Fig. 1079.

POLYSTICTUS HIRTELLUS (Fig. 1079).—The abundant collections of Polystictus maximus in the Botanical Garden at New York, appear to me to include two species. The small plants with unicolorous, soft, cottony pubescence I refer as above. It is possible that they are the young of Polystictus maximus, but I believe not. Of course no one knows what Polystictus hirtellus of Fries was, but it came from this region (Mexico) and appears to answer the description.

NOTES ON THE XYLARIAS

We shall be very glad to receive from any correspondents, particularly from tropical countries, specimens of Xylarias. We have done considerable work on the genus, and have photographs of all the historical specimens we noted in the various museums of Europe. Xylarias will be found abundantly in every locality, usually growing on rotten logs.

XYLARIA RADICANS, FROM P. HYAT VANDERYST, CONGO, BELGE (Fig. 1080).—Clubs 1—1½ cm. long by 4–5 mm. thick, obtuse, all fertile, sessile, or rather there is no distinct stipe from the rooting base. Rooting base 2–3 cm. long, 3 mm. thick. Surface even, greyish black, the perithecia protruding but little. Spores 5 x 12. This species evidently grew in the ground, the clubs on the surface. The rooting bases are all broken and they were probably attached to a buried stick. I have no notes of any species with this habit, excepting Xylaria radicata (bis) which, with its rooting base "a cm. thick," this can not be. There is an African species that I do not know, excepting from accounts that it has the habit of growing from buried sclerotia formed in termite nests. It is represented as having a long, uniform, cylindrical club. Perhaps this is a variation of that species (Xylaria nigripes).

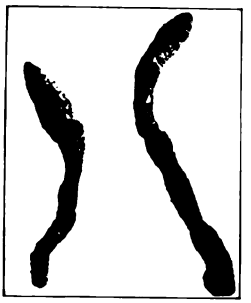


Fig. 1080.

XYLARIA ALBOMACULATA, FROM M. R. ESPINOSA, CHILE (Fig. 1081).—Clubs slender, strongly rugulose with the protruding perithecia, spotted with little white discs (over the mouths of the perithecia?). Fertile portion 2–3 cm. long, 2 mm. thick, sometimes tipped with a slender, sterile apex of equal length. Stroma

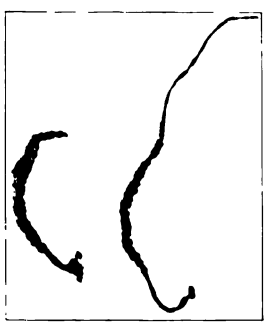


Fig. 1081.

Fig. 1082.

white, scanty. Stipe filiform, smooth, 1–2 cm. long. Perithecia only partially imbedded. Spores 7 x 14. This reminds one very closely of Xylaria scopiformis (Cfr. Myc. Notes, p. 675), but it is characterized by the white discs which appear to be around the mouths of the perithecia. Other species have similar white discs (Cfr. Xylaria Guyanensis Myc. Notes, p. 649). We present a figure of the plant, natural size, also an enlargement (Fig. 1082), to show the little white spots from which it gets its name.

XYLARIAS WITH CONIDIAL SPORES BORNE ABOVE THE CLUBS

XYLARIA FIMBRIATA, FROM J. A. STEVENSON, PORTO RICO.—I have a photograph, made at Kew, of the conidial state (Fig. 1083) of this plant, labeled as above. As far as I know it was never published. If Xylarias were intelligently classed, one section, and a small one, would be devoted to the species that bear their conidial spores on branches above and develop the ascus spores on a club below the conidial branches. At present the section would embrace but two species Xylaria fimbriata and Xylaria comosa.

Fig. 1083.

Fig. 1084.

Fig. 1085.

The ripe specimens of Xylaria fimbriata (Fig. 1084), sent by Mr. Stevenson, are the first mature specimens we have seen. It must be a rare species for, excepting a few conidial plants at Kew, I did not find it in any museum of Europe, nor is it included in Theissen's or Starbäck's recent account of South American species. The species grows from the ground with a slender, rooting base. The clubs are cylindrical, rough with the prominent perithecia. The apex is crowned with the white remains of the conidial branches. Spores are small, about 4 x 8. Mr. Stevenson sends also the conidial state (Fig. 1085). The conidia are borne on fimbriate branches at the end of the club. Our best thanks are extended to Mr. Stevenson for material which enables us to get this species straight.

XYLARIA COMOSA (Fig. 1086).—In connection with Xylaria fimbriata we consider this species, which bears its conidial spores on branches above in a similar manner. It was named by Montagne, who gave a characteristic though diagrammatic figure. The type is still preserved at Paris. It seems to be not rare in South America, though not recorded from the West Indies. Our figure, made from specimens distributed by Rev. Rick, is characteristic The clubs, usually ovate or short, cylindrical are quite distinct from the stipe. They are usually marmorate with little white spots. Spores (teste Theissen) large, 7–11 x 26–38.

Fig. 1086.

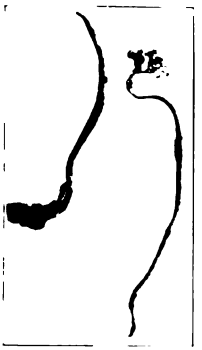


Fig. 1087.

SYNONYMS (AND ALLEGED).—Theissen gives the following synonyms: Xylaria tigrina, as distributed by Rick is this species whatever it may be in original sense. Also Xylaria barbata as illustrated by Starbäck. Xylaria ramuligera is a conidial state apparently. Xylaria collabens, we know only from Montagne's account and figure. We found no type at Paris. But from the figure it can not possibly be this plant. Xylaria eucephala is also known only from the figure from Malay, which has no resemblance to Xylaria comosa. I think comosa is confined to the American tropics.

XYLARIA FURCELLATA.—We present a photograph (Fig. 1087) of this "species," all that is known, which was "described" from India thirty years ago, and to this day is only known from the "type locality." Berkeley got it years before, but it was so poor he would not publish it, but Cooke dug it out and gave it to "science." He also improved on nature by making a drawing of it that in no way resembles the plant. Needless to say, nothing is known about Xylaria furcellata except that it appears to have its conidial spores borne above. Mycological literature would be better off if it were not encumbered with it.

THE GLOBOSE XYLARIAS

There is a small section of Xylaria, characterized by globose or subglobose form. Most Xylarias are club shaped. It is probable that some of these globose Xylarias have in old times been classed as Hypoxylons, but as we have never worked over this genus we do not know. This introduces the question of what is the distinction between globose Xylaria and Hypoxylon. The only difference we are able to point out is that Xylaria is stipitate and Hypoxylon sessile and usually broadly attached. Most Hypoxylons that we know have carbonous stroma, and Xylarias white stroma, but I do not know that that applies to all Hypoxylons. We have specimens of three subglobose Xylarias as follows:

XYLARIA RENIFORMIS, FROM M. R. ESPINOSA, CHILE (Fig. 1088).—Plant black, with a short, smooth, glabrous stipe. Club depressed, globose with concave base, rugulose in drying. Stroma hard, white, becoming hollow. Spores 6–8 x 28–30. This, known only from South America, was named by Starbäck. Theissen refers it in error to Xylaria obovata.

Fig. 1088.

XYLARIA HEMIGLOSSA, as illustrated from New Caledonia has same size and shape as Xylaria reniformis, but small spores 5 x 7–8.

XYLARIA FIBULA (Fig. 1089).—We present a figure of a specimen at Kew, labeled Xylaria fibula, by Massee, but not the plant published by him under this name. The plant he so published he labeled Phacostroma fibula, and in my opinion it is not a Xylaria and should I publish it I would use Massee's generic name, leaving the name Xylaria fibula open for this plant. The genus Phacostroma is a flat sessile, cushion shape plant, with soft, fibrillose, carbonous tissue, quite different from the genus Xylaria. I do not know why Massee, after so labeling his specimens, should publish it under a different name.

Fig. 1089.

Xylaria fibula has a concave base, similar to Xylaria reniformis. It differs in the smooth, even surface. I have no memorandum of the locality whence it came, as when I photographed it I supposed (naturally) that it was the plant he had so published.

XYLARIA OBOVATA, FROM T. S. BRANDEGEE, MEXICO, AND T. J. COLLINS, GUATEMALA (Fig. 1090).—Plant dark brown, obovate or globose, tapering into a short, concolorous stipe. Surface even, glabrous, not rugulose in drying. Stroma white or alutaceous, soft, pithy, becoming hollow. Spores 6–8 x 28–32. In the West Indies we judge this is not rare. It is quite distinct from all related species by its soft stroma.

Fig. 1090.

SYNONYMS.—Xylaria tuberoides, discovered in Brazil by Rehm. Xylaria collabens as illustrated by Cooke, which, however, has no resemblance even remote to Montagne's illustration and can not possibly be his plant, although no one knows what it is. Penzigia obovata, as juggled by Spegazzini. The plant is a true Xylaria, with no relation to Penzigia in the type idea. Xylaria Duchassaiingii, named by Rehm from Guadaloupe, is surely (and fortunately because of its barbarous name) the same as Xylaria obovata.

ALLEGED SYNONYMS.—Xylaria dealbata from South America, not possible. Hypoxylon avellana from Borneo, not at all probable. Penzigia actinomorpha from Brazil is for me a synonym for Xylaria dealbata.

XYLARIA RIDLEYI (Fig. 1091) as named at Kew, from Singapore, appears to me to be same as Xylaria obovata. The stroma in the specimens photographed appears to be curiously two lobed, reminding me of a coffee berry. Of course if this is a feature of the plant it is not a synonym of Xylaria obovata. The spores are given smaller also, 4–5 x 18–20.

Fig. 1091.

Fig. 1092.

XYLARIA CAVERNOSA, FROM J. P. MOUSSET, JAVA (Fig. 1092).—Club globose, black, wrinkled. Context white, hard, hollow. Stipe distinct, black, smooth. Based on a single, immature specimen, we name it simply to have a name for it in our museum. It was referred for us to Xylaria obovata, but that is not possible.

RARE OR INTERESTING FUNGI RECEIVED FROM CORRESPONDENTS

CLAVARIA NIGRICANS, FROM M. ESPINOSA, CHILE (Fig. 1093).—Simple, erect, 1-1½ cm. high, black. Stipe 2 x 5-7 mm. quite distinct from the fruiting portion. Head thicker than the stipe, rugulose plicate. Cystidia none. Spores 6 x 10, hyaline, smooth, laterally apiculate, guttulate.

Fig. 1093.

Fig. 1094.

We have never worked over the Clavarias, but are unable to find a description that fits it. It is an ambiguous Clavaria, for we know no other species that is black, and Clavarias are not supposed to have distinct stipes nor plicate heads. There is a record of a black Clavaria in Europe, but in the sense of Fries at least, it turns out to be a Geoglossum. This little plant grew in the ground and has the general appearance of a Geoglossum and we supposed it was a Geoglossum until we examined it "au microscope." A "new genus" might be made for it, or it might be put in Physalacria but it does not fit either in Clavaria or Physalacria very well. Our Figure 1094, which is enlarged sixfold, will give a correct idea of this little plant, and suggest the advisability of inventing a new name for the genus.

POLYSTICTUS DIALEPTUS, FROM T. HUNTER, AFRICA (Fig. 1095).—Pileus thin, flaccid, dimidiate, largely resupinate. Surface appressed, tomentose, with raised zones, brown. Context thin, brown. Pores fleshy, minute brown. Setae none. Spores oblong, abundant, 6 x 12, hyaline, smooth.

These are the first specimens I have seen and it is referred to Fries' species (of which no type exists) from the description, which it answers in a way, and which was from the same region. It is a

plant that goes in same section as Polystictus occidentalis. The abundant spores, unusual in this class of plants will easily fix it. Of course, in absence of types nothing positive can be stated as to the

Fig. 1095.

identity of the old species, but I think it well to refer plants to old descriptions rather than propose new names. This is doubtful however, for it does not have "an incurved blackish margin" nor are the pores "pale yellow."

LYCOPERDON CEPAEFORME, FROM MISS MARGARET L. FLOCKTON, AUSTRALIA.—This collection (Fig. 1096) shows in a remarkable way the rooting system of the species in Australia.

Fig. 1096.

The plant comes frequently to me from Australia and generally the specimens have a large tap root. We have often noted this and also that the same species from Europe and the United States (where it is

likewise common) usually has a small root about as shown in Figure 1097. We can not explain this. The different soil may have something to do with it, but we believe that the large rooting system is a natural habit that the species has acquired in Australia.

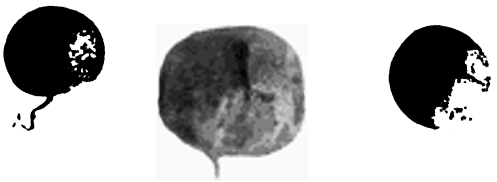


Fig. 1097.

Lycoperdon cepaeforme, with shiny surface, from Miss Margaret L. Flockton, Australia. When we first opened this package and saw the smooth, shiny surface of the specimens we thought we had something new. But when we came to compare it with Lycoperdon cepaeforme we found it same in every other respect. Of course this collection could be named for it is quite distinct from the usual collection, but we think it better to record that in Australia, Lycoperdon cepaeforme very rarely has a smooth, shiny surface and the color is also darker than usual, with no yellowish tint.

NIDULA MACROCARPA, FROM M. ESPINOSA, CHILE (Fig. 1098).—Cups about a cm. high, 6-7 mm. thick at summit, at first appressed tomentose, becoming smooth and brown when old. Peridioles a scant mm. brown, smooth. Spores abundant, hyaline, smooth, 5-6 x 12-16 mic.

Fig. 1098.

The genus Nidula is an excellent genus proposed by Miss White, from Northern United States and Canada, only a few years ago. It has the cups and epiphragm of Crucibulum and the peridioles of Nidularia. (Cfr. Nidulariaceae, page 10.) It has since reached me from Australia, Japan. India, though everywhere rare. This species is very close to Nidula microcarpa, with same cups and peridioles, but spores about twice as large. It is probably best classed as a large spored form.

POLYPORUS ATROSTRIGOSUS, FROM W. A. SCARFE, NEW ZEALAND (Fig. 1099).—Sessile, dimidiate, fleshy. Surface *black*, rough. Flesh white, with pale greyish tinge. Pores irregular, medium. Spores 1 x 5, allantoid, curved.

Fig. 1099.

With the same color, flesh and same spores, this is close to Polyporus caesius, but the peculiarity of the black surface contrasting with the white flesh is such that we have no hesitation in referring it. We would include it with Polyporus caesius in Section 85. We considered it incidentally on page 375 of our Apus

Polyporus pamphlet, but the type specimen we thought inadequate to give a correct idea of it. Mr. Scarfe's specimen, while small, definitely fixes it.

POLYSTICTUS LUTEO-OLIVACEUS, (STIPITATE FORM) FROM W. SMALL, AFRICA (Fig. 1100).—Petaloid, with a short, thick lateral stem, unicolorous, tawny olive (Ridgway). Pileus thin, rigid, suborbicular. Surface smooth, dull. Context soft, concolorous. Stem a cm. thick, dilated at base, soft texture. Surface concolorous and similar to that of the pileus. Pores very minute, shallow, regular. Spores not found.

Fig. 1100.
Polystictus luteo-olivaceus (stipitate form).

If Mr. Small had cut off these pilei from the stems and sent them separately they would have been referred to Polystictus luteo-olivaceus to which they accord perfectly in every character excepting they are thinner. It is very strange that a species known from many sessile collections, and growing flat, attached by a broad base to the host, should take a form produced from a stipe. When we first received the plant we could not believe that it was a form of Polystictus luteo-olivaceus, and proposed to call it Polystictus pedatus. We have since noted where a stipitate form is recorded as common in Africa, by Miss Wakefield, growing with the ordinary form, and there is no further question in our mind. But before we received these specimens, we had seen many specimens of Polystictus luteo-olivaceus, and never a sign of a stipe.

MYCOLOGICAL NOTES.

BY C. G. LLOYD.

No. 52.

CINCINNATI, O. DECEMBER, 1917.

n. 1845. P. A. Saccardo fec. 1906.

MYCOLOGICAL NOTES

Issued by C. G. LLOYD.

224 West Court Street, - - CINCINNATI, OHIO.

SUBSCRIPTION PRICE.—A little personal interest on the part of the recipient in picking up and sending to my address, specimens of the larger fungi. All are desired excepting specimens of fleshy Agarics. Simply dry the specimens and send them in.

P. A. SACCARDO

About ten years ago we gave in Mycological Notes, page 365, a small portrait of Prof. Saccardo taken in 1891. We are glad to be able to present a larger, and more recent photograph, made about ten years ago, 1906. Prof. Saccardo was born in 1845 and is 72 years of age at present.

Few men have been able to accomplish as much work in a lifetime as has been done by Saccardo, who has issued 22 volumes of Sylloge Fungorum, containing Latin descriptions of 72,438 fungi, translated from every language of the world. We are advised that another volume is now under way.

As we gave in our previous notice of Prof. Saccardo an expression of the magnitude of this work and the thoroughness with which it has been done, we will not repeat it here. We will only add that we doubt if any other branch of science has as thorough, accurate and complete a summary of the proposed species as has mycology in the twenty-two volumes that have been issued. We hope that Prof. Saccardo has many years ahead of him to continue the work, and we doubt if anyone else would have the courage or the facilities to undertake it.

PHELLORINA STROBILINA

FROM MISS A. V. DUTHIE, SOUTH AFRICA

Miss Duthie does have the luck to get a lot of rare "puff balls." This is the fourth rarity that she has sent me. Phellorina strobilina has heretofore been known from two collections, both from Australia. One is at Berlin, named as above (1880), the other at Kew, named Xylopodium ochroleucum, by Cooke (1887). This is the first specimen I have ever received, and the first specimen collected in Africa, nor has it been collected in Australia for thirty years.

Phellorina strobilina (Fig. 1101) is a very remarkable plant, the peridium has large, thick, pyramidal scales and the plant was well named in reference to a pine cone. The dehiscence is no doubt by the breaking apart of these thick scales. It has no sign of a columella, and is filled with a uniform, pale, brownish gleba. The spores are globose, 6–7 mic. and tuberculate. They are very pale color under the lens. It has no true capillitium, but shreds of a hyaline membrane are scantily mixed with the spores. The "capillitium thread," as shown in Cooke's figure, as well as the "allantoid, sporiform corpuscles," that he imagined and showed, are conspicuous by their absence.

Fig. 1101.
Phellorina strobilina

HISTORY.—Mueller, who forty years ago was very active and prominent in Australian botany, but did not know anything about fungi, sent a lot of fungi to Germany. I do not know that I have it straight, but I think they were sent to de Thuemen, who turned them over to Kalchbrenner, who was a prominent amateur worker, and was just about as competent to name foreign fungi as I would be to

write a treatise on music, and I do not know one note from another. This species was collected by Thozet (722) and the specimen is still at Berlin. Kalchbrenner published it (Grevillea, 1874) as Scleroderma strobilinum, although he should have known it was not a Scleroderma, had he known much about the subject. Fortunately he gave it a good specific name. Afterwards Kalchbrenner got into relations with Cooke, to whom he sent a number (mostly little frustules) of these Australian fungi. This particular specimen I did not find at the Kew Museum.

Under the joint name of Kalchbrenner and Cooke (although I think it was mostly Cooke), these Australian fungi were rehashed in Grevillea, (1880, and subsequent issues) and in this paper the plant is called Phellorina strobilina, as it is correctly classed.

In 1887, Cooke got a young specimen from the Darling River, Australia, and although he had correctly named the plant seven years before, he discovered it was a new species and called it Xylopodium ochroleucum. He afterwards, under this name, gave an excellent figure (Fig. 155, plate 16) in the Handbook (except as to the microscopic characters which were all incorrectly shown).

In 1886, Forquignon, who seems to have been a protégé of Quélet and lived at Dijon, France, wrote a little work which he entitled "Les Champignons Supérieurs," with a chapter on "genres exotiques." As all he knew was some inaccurate figures prepared by Quélet, and probably never saw a specimen "exotique" in his life, naturally he discovered some wonderful "new genera" among others Areolaria based on a figure that no one to this day knows anything about.

When De Toni compiled the seventh volume of Saccardo he put Phellorina strobilina in Forquignon's genus and called it Areolaria strobilina. He added two other "species," and no two of the three belong to the same genus. Finally Fischer in Engler and Prantl puts the species back in Scleroderma, where it never did belong, and gives an "original" figure which looks very much like a French artichoke, but has no resemblance, however remote, to this plant. Cooke in his figure shows some very peculiar bodies that he calls "allantoid, sporiform corpuscles." I do not know where he got the idea, for there is nothing whatever in the gleba of his specimen to suggest them even. But Cooke, as I have often remarked, was a wonderful artist in drawing things that do not exist.

The specimen sent by Miss Duthie was collected in Rhodesia. A single specimen of a very similar plant, and possibly the same, has been collected in the United States and called Whetstonia strobiliformis. It appears to differ, however, in having permanent cells in the gleba. (Cfr. Mycological Notes, page 270.)

ALEURODISCUS VITELLINUS

FROM M. R. ESPINOSA, CHILE

We adopt the above name for the plant as it is perhaps the best of several genera to which it has been referred. At the same time we think it is better in Cyphella, though it widely differs from the main character of both genera. A "new genus" should be made for it, and it is a monotypic genus, as no similar plant as far as known occurs elsewhere than in Chile. The genus "Aleurodiscus" of modern writers is only an artificial product, and includes all Basidiomycetes that have large spores and large basidia. A more incongruous assortment could not be gotten together. In the main Aleurodiscus are Stereums or Corticiums with no analogy to this plant either in appearance shape or texture. Excepting under the microscope this plant resembles a Peziza in flesh, form and habits.

Fig. 1102.

Many years ago Gay sent a collection of Chilean specimens to Paris. Both Montagne and Léveillé worked with it. The latter called this plant Exidia vitellina, though why an Exidia I do not know, for it was not an Exidia even in those crude days. Montagne gave a very good illustration of it in Flora Chilena. Berkeley referred a plant here, from Tasmania, evidently from Montagne's picture. I did not find the specimen at Kew, but judging from Berkeley's picture it was something entirely different.

It appears in Saccardo as Hirneola vitellina taken from Fries who probably never saw Léveillé's specimen, but was only guessing from Léveillé's short account. Patouillard first called it Cyphella vitellina and later Aleurodiscus vitellinus. As previously stated it has but little resemblance to other species of either genus, and to the latter only in having large spores and basidia. I am particularly glad to get this plant with an interesting history from Mr. Espinosa. The specific name vitellinus "egg yellow" does not well express its color. Mr. Espinosa informs me that when fresh it is orange and the dried specimen is more brown. Until I sectioned the plant, I took it for a Peziza. Our photograph (Fig. 1102) is made from a specimen that was soaked.

THELEBOLUS LIGNICOLA

FROM STEWART H. BURNHAM, NEW YORK

More than a century ago (1790) Tode published a work with figures, rather crude it is true, but many species, especially the old Spherias, got their names from this work of Tode. Among others a little gelatinous plant (his fig. 56) that Tode represented as ejecting a little gelatinous ball, somewhat in the same manner as Sphaerobolus stellatus (Cfr. Mycological Notes, p. 431). Tode named his plant Thelebolus, and Fries put all these genera that had the spores in "little balls" together as a family. The structure of these "balls,"

Fig. 1103.

however, is quite different. In Sphaerobolus the "ball" is a peridiole with the same structure as the peridioles of other Nidulariaceae, as now classed. (Cfr. our pamphlet on Nidulariaceae). Thelebolus is still included in Saccardo in Nidulariaceae, but as we could not get any information on it when we wrote our pamphlet, we omitted it. We are therefore particularly glad to get this collection from Mr. Burnham, as we get our first definite idea of the genus from these specimens. Thelebolus has no place in the Nidulariaceae. The nature of the peridiole is entirely different.

Thelebolus lignicola, as we call these specimens, is a little gelatinous plant (Fig. 1103, natural size). As it matures it opens at the apex, and a small viscid, closed, white ball, about the size of a mustard seed, is squeezed out. Our Fig. 1104 shows four of the plants (enlarged) and Fig. 1105, one that has thrown out its peridiole. Tode represents this peridiole as ejected with some force, which we are unable to confirm. The structure of the peridiole has been differently shown by recent writers. Brefeld represents it as a cavity filled with spores only. While a good microscopist, he was in error. The spores are borne in asci, each containing numerous spores. The walls of the asci are very thin and transparent, and are seen with difficulty, but in one mount we made under the influence of the water, the spores could be seen streaming out of the asci. Zukal and Heimerl both show the structure correctly.

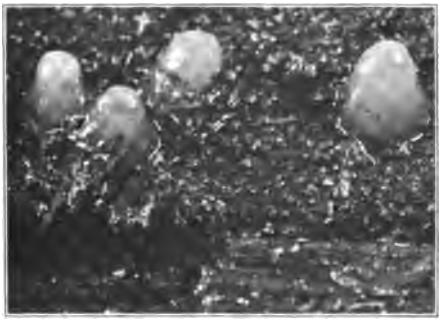


Fig. 1104.

Fig. 1105.

In the most recent works Thelebolus is classed in the Ascoboleae in the section with hyaline spores and close to Ryparobius, which has the same spores arranged in the ascus. Of course, it is stretching a point to class in the Discomycetes, a plant that has its asci not in a disciform receptacle, but in a closed peridiole.

THELEBOLUS LIGNICOLA.—Small, gelatinous, pale, almost white, about 2–3 mm. high. Rupturing at the apex and exuding a small (1 mm.), white, gelatinous peridiole. Spores hyaline, 3½ x 4–4½ mic., smooth, borne many (about 60–100) in each ascus.

It grows gregariously on rotten wood. There have been five species of Thelebolus listed, all little, yellow plants on manure. We are unable to reconcile this pale (almost white) species on rotten wood with either, and have therefore proposed a new name for it. Mr. Burnham sent us an ample fresh collection. We doubt if we could have done anything with it from dried material.

PHALLOGASTER GLOBOSUS

FROM W. A. SCARFE, NEW ZEALAND

Globose, hollow, proceeding from strong mycelial, rooting strands. Surface smooth, dark, almost black. Flesh about a mm. thick, of three layers; a thin cortical layer, an intermediate, fleshy gelatinous layer, and a thin black, tenacious, gelatinous lining layer. The latter bears the spores, and under the microscope, is resolved into a mass of spores, with a few delicate subhyaline hyphae. The spores are hyaline, smooth and straight 1½ x 5 mic.

Fig. 1106.

I do not know, but I presume that the plant is related to the Phalloids. While the gleba has no odor, the spores are the same and the gleba suggests a Phalloid.

There is a well known species of Phalloid (or better a related family), Phallogaster saccatus, which bears its gleba as a Gasteromycete (Cfr. Phalloid, Synopsis, page 71). While there are strong differences between Mr. Scarfe's plant and Phallogaster, I think it better to refer the plant to this genus for the time being at least, until we learn more about it. If Mr. Scarfe will watch for the plant and send some *very young* specimens in formalin before the gleba has deliquesced, its exact relation to Phallogaster can be solved. Our Fig. 1106 represents the plant, natural size, and Fig. 1107 the inside of a section. Mr. Scarfe sent the plant wrapped in cotton soaked in formalin, and it reached me in perfect condition.

Fig. 1107.

A few years ago Mr. Murrill found in Jamaica a similar plant, which he published (Mycologia, Vol. 2, p. 25) as Protophallus jamaicensis. While I have not seen the plant, a close reading of his description indicates to me that it may have been better to have referred this to the genus Phallogaster.

PORIA FIMBRIATA (OR POROTHELIUM FIMBRIATUM)

FROM REV. A. BOYER, MARYLAND

We do not present this as a rarity, for it is a common species. It is Porothelium fimbriatum of Fries, but the genus Porothelium should not be maintained, for it is only the young condition of a typical Poria. Several times I have gathered the plant fresh, and was puzzled for sometime to recall it, for I could not think of any similar Poria, and I knew the plant was a Poria and was familiar. Persoon

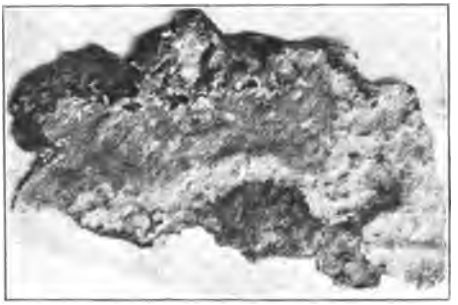


Fig. 1108.

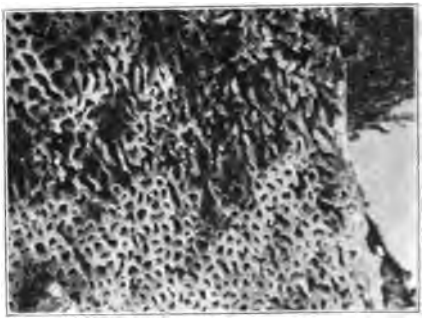


Fig. 1109.

calls the plant Poria fimbriata (Fig. 1108 from his herbarium) and it should not have been changed. When young it is a thin, white, fimbriate membrane. When it begins to develop its pores which are at first, little, pustular cups on the surface, but soon become depressed and poroid as an ordinary Poria. Our Fig. 1109 is an enlargement of the pores of a mature specimen. In its mature and usual state it can not be held different in general character from any other Poria. The genus "Porothelium" was based on the young state.

HISTORY.—As to species there is but one in Europe or United States, all others come under the head of the "Myths of Mycology." Porothelium Friesii as named by Montagne in Europe, Porothelium papillatum as named by Peck and Porothelium pezizoides as named by Schweinitz (as Boletus) are all based on the young, papillate condition. Porothelium lacerum as named by Fries in Europe is the same as Porothelium fimbriatum. Fries did not recognize the old (Poria) state.

Berkeley never seemed to have had any idea, however vague, as to "Porothelium," and most of the species he "discovered" have no relation or affinity to it. His Porothelium rugosum and Porothelium variabile from Brazil are Polyporus with pustular pore mouths, closer to Polyporous lucidus than to Porothelium. Porothelium reviviscens is a gelatinous plant with little granules. What the "genus" is I can not say, but it is not a Porothelium, Porothelium hydnoideum was based on the merest little frustule and should not have been named at all.

But the worst bull Berkeley made on Porothelium was Porothelium Stevensonii, which was a Hydnum (sic.) and will be considered in the next plant.

As to Cooke he labeled a specimen of Pyrenomycete (sic.) from Brazil as Porothelium which shows how much of an idea he had of it.

The "genus" Porothelium was based on the young condition of a Poria, in the start, and I think every species that has been added since is wrong, and most of them bulls.

GRANDINIA SUDANS

Two of the summers that I spent in Sweden were devoted almost entirely to resupinate species. I learned very little that was definite, and very few species were satisfactorily worked out, for the truth is that Fries never gave the resupinate species much attention, and it is very hard to interpret the little that he did do on the subject. There was one species, however, that I became very familiar with, which Fries in his latest work called Grandinia Agardhii and charac-

Fig. 1110.

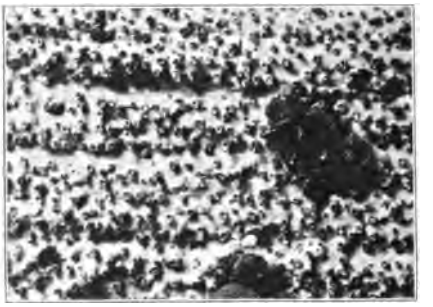


Fig. 1111.

terized by having the granules with the apices "excavatis rufescentibus." It was very common, always on pine, and usually formed little, circumscribed patches that I soon learned to recognize on sight. When fresh, each granule exudes a drop of colored liquid which forms a little ball lying in the concave apex. (Fig. 1110, enlarged). In drying (Fig. 1111, enlarged), the drop dries up and the excavated apices become more pronounced, giving the plant the general appearance of a "Porothelium."

This change has led to some funny mistakes. Albertini and Schweinitz originally gave a very good account of the plant and named it Hydnum sudans. Fries got a dried specimen from France and supposing that the little dried, exuded drops were peridioles containing the spores, named it Thelebolus sudans, afterwards changed to Dacryobolus and the plant is still carried as a genus in Saccardo (Vol. 7) among the Gasteromycetes (sic.). It bears its spores on basidia on the *outside* of the granules, hence is far from being a Gasteromycete.

When Berkeley got this plant from Stevenson he named it Porothelium Stevensonii and Stevenson's little cut on page 231 gives a very good idea of the structure of Grandinia sudans. Berkeley's classification might have been correct if the plant had borne its spores on the *inside* instead of the *outside* of its granules, but that is quite an important difference, which Berkeley should have looked into before proposing his "new species."

DACRYOMITRA GLOSSOIDES

FROM ANN HIBBARD, MASSACHUSETTS

Ever since we have been working with the tremellaceous plants

we have been on the watch for a plant resembling the well known figure (1112) which we reproduce from Brefeld. In the original it has a Morchella-like head, and we have never gotten, nor seen in the museums, anything like it at all, until this plant was received from Miss Hibbard. There is quite a difference in general appearances of Miss Hibbard's plant (Fig. 1113), but we are convinced that it is the original of Brefeld's figure. It will be noted from the photograph of

Fig. 1112.

Fig. 1113.

Miss Hibbard's specimen that it is convolute, lobed, with the head distinct from the stipe. The latter is the distinction made by Tulasne when he proposed the genus Dacryomitra. If we are correct in the interpretation of Brefeld's species the distinction between the head and stipe is not as definite as it should be.

Dacryomitra glossoides is bright orange yellow, with a paler stem. The basidia are furcate and the spores, which are pale yellow, are oblong, 8 x 20 mic., filled with granular matter, and become 3–4 septate when old. In general characters both the basidia and spores are the same as these of the genus Dacryomyces.

HISTORY.—As previously stated, Dacryomitra glossoides, while a frequent plant of record in Europe, must be rare, as I never saw a specimen before. I am disposed to think that Brefeld's figure (which has been copied several times) is overdrawn. We use the current name, although those who wish to write an authority must write Brefeld after it. It is from the description surely not Calocera glossoides of Persoon which Fries supposed it to be. It answers Fries' description, but not Persoon's.

DACRYOMITRA DUBIA (Fig. 1114).—Although it is rare, we have several times gathered a spathulate plant around Cincinnati, which we have labeled Calocera dubia in our museum. It has no sharp distinction of stipe and head, hence we labeled it Calocera. We have never seen it more strongly developed than in our figures. In the light of Miss Hibbard's specimen we think now it is a simple form (or perhaps a form not well developed) of Dac-

Fig. 1114.

ryomitra glossoides. In fact our plant has been referred, in Europe, to Dacryomitra glossoides, but on comparison with Brefeld's figure, I could not see how it was possible. I think now it was probably correctly referred, for there is far less difference between our plant and Miss Hibbard's than between her plant and Brefeld's figure. Dacryomyces flabellus as named by Ellis (or as compiled in Saccardo Dacryomyces flabellum) is probably, from the description, the same plant.

STEREUM FASTIDIOSUM

FROM LEON MAIRE, FRANCE

When Persoon first assembled the European species into families, he proposed the genus Merisma, to include those with "the substance of a Thelephora and form of a Clavaria." The first section of Merisma, viz.: "decumbent, branches deformed" has always been more or less doubtful, and confused. The first species which Persoon lists as a Merisma (with a doubtful mark) is a rare plant, white, and foetid when fresh. Usually it is resupinate and then is classed as Corticium, as in Bourdot's recent works. Rarely it evolves free, pileate flaps, as in the specimen (Fig. 1116) from Mr. Maire, and then it became Merisma cristatum in part of Persoon. There is considerable doubt in the interpretation of Persoon's Merisma cristatum, for there are two (and I think three) plants so referred by Persoon, and three entirely different plants have by various authors been so named. In the list of icones cited recently by Saccardo, three entirely different plants are cited under the name Thelephora cristata as follows:

Fig. 1115.

SEBACINA INCRUSTANS (Fig. 1115).—We have a quite common white plant which runs over sticks, and dead leaves, and often bases of shrubs, grass, etc., which was called Thelephora incrustans and Thelephora sebacea by Persoon. Tulasne showed that it has globose, cruciate basidia, and named it Sebacina incrustans. When this plant forms free growing flaps (Fig. 1115), which it usually does not, it resembles the following plant, but most of the specimens in Persoon's herbarium and one from Persoon at Kew evidently belong to Sebacina incrustans. Still it is doubtful if it is the original of Persoon, for that description fits the following plant better, as interpreted by Patouillard, and the figures that Persoon cites (Bulliard and Sowerby) can not possibly be referred to Sebacina incrustans.

STEREUM FASTIDIOSUM, FROM LEON MAIRE, FRANCE.—The plant received from Monsieur Maire (Fig. 1116) is, we are sure on comparison, the same as we have received from Rev. Bourdot (resupinate) as Corticium fastidiosum, and the same as Patouillard calls Cristella cristata. It has small (4–5 mic.), hyaline,

Fig. 1116.

echinulate spores, and clavate basidia. It differs from Sebacina incrustans, which it otherwise resembles, but which has large (8 x 16) elliptical, hyaline, smooth spores with granular contents, and globose, cruciate basidia. Until we received Monsieur Maire's specimen we were almost beginning to doubt the existence of "Cristella cristata," as we had never seen a specimen. It does not occur in the United States to my knowledge.

THELEPHORA FIMBRIATA (Fig. 1117).—The two preceding plants are white, with hyaline spores, but a third plant, Thelephora fimbriata, which is a true Thelephora with colored, irregular spores, has been also named Thelephora cristata in various exsiccatae and books of Europe, viz.: Schroeter, Massee (as Soppittiella, sic.),

Desmazieres (Exsic., 362), Ellis (Exsic., 512), von Hoehnel, etc. The incrusting species of true Thelephora are not all placed correctly, but probably the plants passing as Thelephora spiculosa, Thelephora

Fig. 1117.

fimbriata and (by the English) as Thelephora mollissima are all the same. As this Thelephora has colored spores and colored hymenium, it should not have been confused with the preceding plants, which are white, but it was. Its only resemblance is its semi-incrusting habits.

RARE OR INTERESTING FUNGI RECEIVED FROM CORRESPONDENTS

STEREUM SPECTABILE, FROM J. UMEMURA, JAPAN (Fig. 1118).—This was named from the Philippines, but the Japanese plant is exactly the same on comparison. It has rather peculiar structure. First, it has "gloeocystidia," better called "ducts," filled with color matter and found in the hymenium of many Stereums that "bleed." Second, it has branched paraphyses, known as "dendrophysen," which are rare in Stereums. The surface is smooth and shiny, with appressed, silky fibrils.

Fig. 1118.

STEREUM RADIATO-FISSUM, FROM MISS MARGARET FLOCKTON, AUSTRALIA (Fig. 1119).—This has the same "structure" as Stereum spectabile (see above) and some one has endorsed on the type at Kew that it is a synonym. I can not agree and believe it due to too much attention to microscopic details and too little to macroscopic features. The structure may be the same, but surface of the pileus is silky, with appressed fibrils in Stereum spectabile and hirsute, with rather coarse hairs in Stereum radiato-fissum. I believe even our photographs will show this difference.

Fig. 1119.

PANUS STRIGOSUS, FROM W. H. BALLOU, NEW YORK, AND FROM ROY LATHAM, NEW YORK.—There occurs in our Eastern States a species of Panus that we have always confused under two names, namely: Panus levis and Panus strigosus. When we examined the type of these plants at Kew we thought they were different species, but in going over our specimens and in the light of notes from Mr. Ballou, we are satisfied that we are dealing with but one species. At first it is covered with soft hairs as shown in figure 1120 (specimen from Mr. Latham), but it persists and finally becomes strongly strigose, as shown in figure 1121 (specimen from Mr. Ballou). It is a beautiful plant when nicely dried. When young the stem and pileus are covered with fine, soft, velvety, ochraceous tomentum, which is somewhat detersive in the older plants. When old it is covered with long strigose hairs, which are inclined to fall away, leaving the pileus with smooth spots. We have gotten several collections of these plants from our Eastern correspondents, and it frequently grows on the apple tree, but it does not, as far as we know, occur in the West. Mr. Ballou advises us that he finds it

Fig. 1120

Fig. 1121

Panus strigosus.

growing in the hollow of living beech and black birch. It begins to appear about the first of July but persists until late in Autumn, and the insects do not seem to trouble it.

TRAMETES TRABEA, FROM MISS A. V. DUTHIE, SO. AFRICA (Fig. 1122).—This is a frequent plant in the United States, rather rare in Europe, but our form has usually elongated pores, and is known as Lenzites trabea. This South African plant has round

Fig. 1122

pores (Fig. 1122) at first at least and is better called Trametes trabea. In other features, color, texture, surface, spores (4 x 8), it is the same as our American plant.

HEXAGONA SMALLII, FROM W. SMALL, AFRICA (Fig. 1123).—Pileus thin, ½ cm., unicolorous, two to four inches in diameter, sessile. Color about Dresden brown. Surface smooth, minutely appressed, silky, sometimes with narrow, faint zones. Pores concolorous; medium, 2 to mm. shallow. Spores not found. Cystidia none.

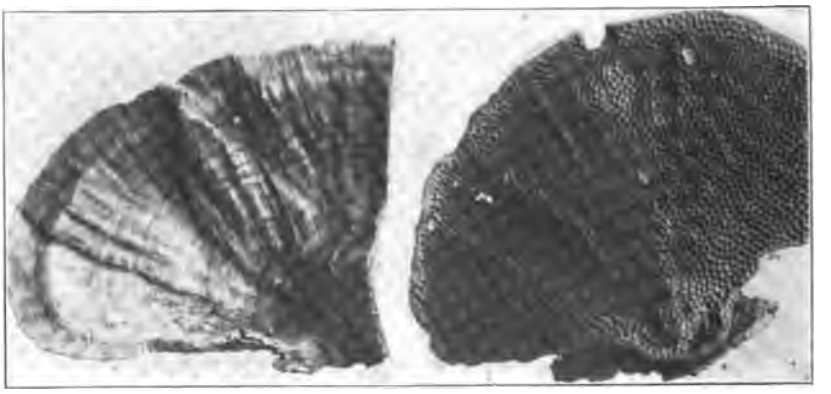


Fig. 1123.
Hexagona Smallii.

If we were rewriting our Hexagona pamphlet we would place more stress on the basic colors than we did. Hexagona dermatiphora (Cfr. Myc. Notes, p. 501), Hexagona Smallii, and Hexagona speciosa are three African species, in the same series as to color, the first with small, the next with medium and the last with large pores. Hexagona crassipora has very thick pore walls and belongs to the same section.

MYCOLOGICAL NOTES.

BY C. G. LLOYD.

No. 53.

CINCINNATI, O. FEBRUARY, 1918.

JOHANNES RICK, S. J.

MYCOLOGICAL NOTES

Issued by C. G. LLOYD.

224 West Court Street, - - CINCINNATI, OHIO.

SUBSCRIPTION PRICE.—A little personal interest on the part of the recipient in picking up and sending to my address, specimens of the larger fungi. All are desired excepting specimens of fleshy Agarics. Simply dry the specimens and send them in.

LE REV. PÈRE JOHANNES RICK, S. J.

Né en Allemagne le 19 Janvier, 1869, le Père J. Rick, entre à l'age de 18 ans dans l'Ordre des Jésuites. Pendant les années de son magistère au Collège de Feldkirch en Autriche il fit la connaissance de Mr. l'Abbé Bresadola et ne tarda pas à se livrer, sous la direction d'un si grand maître, aux études de la mycologie.

En 1899 il fit paraître ses quatre premières Contributions sur la Flore Mycologique de Vorarlberg, où se trouve Feldkirch, dans la "Revue Oesterreichische botanische Zeitschrift," et en 1903 il publia sa cinquieme Contribution dans la même Revue.

A cette époque-là cependant, c'est à dire de 1899 à 1903, il n'etait plus à Feldkirch, mais à Valkenburg ou il était allé étudier la théologie.

En Octobre, 1903, il allait passer quelques mois en Portugal pour le perfectionner dans la langue Portugaise avant de partir pour le Brésil, et il profita des neuf mois de son séjour a Torres Vedras pour étudier la flore mycologique de cette localité, et en faire le sujet d'un article intitulé, "Fungos dos arredoree de Torres Vedras," publié dans la Broteria, IV, 1905. Dans cette contribution il s'attache surtout à étudier les Ascomycètes, dont il énumère 48 espèces, parmi lesquelles, deux nouvelles pour la science.

Au mois de Juillet, 1904, il s'embarquait à Lisbonne pour le Brésil Méridional, muni d'une excellente bibliothèque mycologique, de microscope, etc., et ce qui vaut mieux encore, d'une activite scientifique peu commune, et un esprit d'observation incomparable. Tout faisait donc prevoir une ère de succès scientifiques pour le jeune mycologue qui partait pour aller se fixer dans le sud de l'Amérique, à la végétation luxuriante, et dont la cryptogamie était encore si peu connue. Pendant les deux premières années, cette espérance ne se démentit pas. D'un côté il commencait à publier dans la "Broteria" une série d'articles fort remarqués: Vol. III, 1904, "Fungos de Rio Grande do Sul;" Vol. V, 1906, "Pilze aus Rio Grande do Sul," ou il énumére 310 espèces, avec de nombreuses photographies et observations fort intéressantes, avec la description de plus de 40 espèces nouvelles; Vol. VI, 1907, "Contributio ad monographiam Agaricacearum et Polyporacearum Brasiliensium," ou il énumère 186 espèces avec 9 planches contenant la photographie de plus de 50 espèces.

D'un autre côté il envoyait au Musée de Feldkirch les duplicata des espèces citées dans ses articles et chargeait le P. Rompel, curator de même Musée, de distribuer ces "duplicata" aux différentes institutions scientifiques qui en feraient la demande. Telle fut l'origine des fameux exsiccata: "Rick, Fungi Austro Americani."

Malheureusement cette activité mycologique si bien commencée, s'arrêta tout d'un coup. Le Père Rick, victime d'un surménage intense, fut obligé sur l'ordre des médecins de cesser toute occupation intellectuelle trop absorbante, et en particulier tout travail d'observation microscopique. Depuis lors, son amour pour la mycologie se manifeste cependant par son ardeur à collectionner lorsqu'il chavauche à travers le "sertão" du

Brazil. Mr. Lloyd continue à recevoir le fruit de ses belles récoltes pendant la guerre, le P. Theissen les recevait avant la guerre.

Il faut dire en effet, et ce n'est pas là son moindre mérite, que le P. Rick a formé dans le P. Theissen un successeur digne de lui. Il ne s'est retiré de la lutte sans avoir laissé un disciple fidèle, à qui il a légué son expérience, ses riches collections, sa bibliothèque et son laboratoire. C'est grâce à lui que le P. Theissen a pu si vite publier de si belles monographies, et en particulier les: Xylariaceae Austro-Brasilienses et les Polyporaceae Austro-Brasilienses sans parler des nombreux articles publiés dans les Annales Mycologici, Broteria, etc.

L'auteur de ces lignes ne saurait oublier que c'est aussi grâce au Père Rick qu'il s'est épris de l'amour des champignons. Lorsque le P. Rick étudiat la theologie à Valkenberg, j'avais récolté quelques champignons en Portugal, n'ayant pour tout aide que la Flore des Champignons de Costantin et Dufour. Ayant appris par le P. Hillig de Toledo (Ohio), que le P. Rick s'occupait de mycologie, j'ai résolu de lui envoyer ma collection de Basidiomycetes et Ascomycetes (une cinquantaine d'espèce mal sèchées) avec le nom de convention que je donnais à chaque espèce, d'apres Costantin et Dufour. Je manifestais en même temps mon désir de cesser toute étude de mycologie, que je trouvais trop difficile et impraticable. La réponse du P. Rick ne se fit pas attendre. Il m'écrivit une longue lettre pour me féliciter et m'encourager. (Il paraît que j'avais réussi à ne pas me tromper sur le nom générique de quelque Russules, Lactaires et Tricholomes!!!) Il prétendait que j'avais vaincu les premiéres difficultés, que c'était un devoir de conscience pour moi de continuer, que je devais me mettre en correspondance avec Bresadola, etc., etc. Bref, il m'en dit tellement qu'il réveilla en moi le feu sacré de la mycologie, et voilà pourquoi malgré mes occupation professionnelles innombrables et tres absorbantes, je m'occupe quand même de temps en temps de mycologie.

C'est donc un tribut de gratitude qui me dicte aujourd'hui ces lignes d'admiration sincére en l'honneur de mon excellent maître et ami, le P. Johannes Rick.

Ajoutons, et ce n'est pas banal en ces jours de haine et de guerre mondiale, que cet éloge d'un authentique Allemand est fait par un non moins authentique Francais. Heureusement que la Science n'a pas de patrie!—*Camille Torrend, S. J.*

POLYPORUS RUSTICUS, FROM P. VAN DER BIJL, SOUTH AFRICA (Fig. 1124).—Sessile, dimidiate. Surface rugulose, scrupose. Context hard, subligneus. Brussels brown. Pores rigid, small, with

Fig. 1124.

tissue paler than the context. Mouths concolorous. Setae none. Spores cylindrical, 3½ x 8, lateral, apiculate, hyaline.

I would enter this in Section 95, although the hard context and generally rigid nature suggests Trametes. I do not know any other species with same context color.

STROPHARIA TUBEROSA

BY H. C. BEARDSLEE

In a recent number of Mycological Notes I notice a short account

of some sclerotia from West Virginia. I have in my note books an account of some similar growths which may or may not shed light on the question of their identity. At any rate they will be a slight contribution to our knowledge on the subject of sclerotia, as, so far as I can learn there is nothing in print that corresponds with my material.

Fig. 1125.

A few years ago a Stropharia which seemed new to me appeared in abundance in a tract of woods in which cattle had run for some time, growing in old masses of cow dung. In form the plants were much like Peck's Stropharia umbonatescens and the Hungarian species S. mamillata.

It seemed quite distinct from Peck's species, however, in two ways. The spores of S. umbonatescens as it occurs in Ohio I have found 18–20 long, while the N. C. plant had spores 8–10 long. In addition in every case I found the stipe ending in a long, crooked root, terminating in a well developed sclerotium. A large number of specimens were examined, and in no case was a plant found without this growth. No reference has been made by any collector so far as I know to any such feature in either S. umbonatescens or S. mamillata. In my notes I have dignified my plant with a name, Stropharia tuberosa, though it may eventually join that rapidly increasing family of new species that are quite old. My description follows.

STROPHARIA TUBEROSA (Fig. 1125).—Pileus 2–4 cm. broad, at first campanulate, then expanded and rounded with a distinct umbo, smooth, viscid, brownish or tawny, with the umbo darker. Gills rather broad, becoming dark brown or almost black. Stipe rather slender, 7–12 cm. long, 3–4 mm. thick, striate above, a little paler than pileus. Spores 8–10 by 5–6, almost black.

Growing in old cow dung, from a black sclerotium which is 2–3 cm. thick.

NOTE.—A similar plant, called Naucoria scleroticola, was published in Mycological Notes, page 722, based on specimens from Rev. Boutlou, West Virginia. Since this was published I have been advised by Jakob E. Lange, Denmark, that Naucoria arvalis (Hym. Eur., p. 261) at times is developed from sclerotia, and I have little doubt that our American Naucoria should be referred to this species of Europe. Prof. Lange finds that the European species has smaller spores (5–6 x 9–10 mic.) than Naucoria semiorbicularis, which I have not been able to note as to our plant. While sclerotia have never been noted (in print) as to Naucoria arvalis, the Friesian description "with long filiform root" implies that it may have been so developed. My best thanks are extended to Prof. Lange for advice on the subject. This plant is, however, different from Stropharia tuberosa in the color of the gills, and other differences, as shown in Prof. Beardslee's description.—C. G. L.

RARE OR INTERESTING FUNGI RECEIVED FROM CORRESPONDENTS

HYDNUM FIMBRIATUM, FROM MRS. A. M. HADLEY, VERMONT.—We are pleased to give a photograph of this rare plant, for this is the first specimen we have ever seen. In fact, we believe the only other collection known is the type collected in Pennsylvania. Banker named it and gave a good description (except as to color), from which we have determined it. It has a resupinate subiculum bearing somewhat tubercular nodules from which short, dense branches proceed that bear the short, pendulose teeth. The spores are 4 x 6 hyaline, smooth, guttulate, though this specimen, evidently young, has in addition

Fig. 1126.

Fig. 1127.
Hydnum fimbriatum.

smooth, subglobose spores probably conidial. The color of the subiculum is yellowish, but of the branches and teeth, flesh color, with no trace of yellow. As the dense branches hide the subiculum, there is no indication of yellow until it is cut open. Banker compares it to Hydnum Schiedermayeri, a pure, yellow plant, which it only resembles in methods of growth. There is no possibility of confusing it. We were glad to find that the plant had been named, for when we first saw it, we were afraid we would have to inflict another "new species." Our figure 1127 represents the plant as received, and figure 1126 a small portion with the teeth enlarged six-fold. We have received a second liberal sending from Mrs. Hadley, and the plant is now abundantly represented in our museum.

CLATHRUS CAMERUNENSIS, WHITE FORM. PHOTOGRAPH BY P. VAN DER BIJL, AFRICA (Fig. 1128).—This is the first correct illustration that has been published. The feature of this species is, that it is white. It is only known from Africa, and is close to Clathrus gracilis of Australia. Hennings got a specimen in alcohol from Cameroon, described as dark olive, gave a more or less (apparently less) accurate figure of it and named it as above. Of course, there is no assurance that it is the same plant Hennings had, but the probabilities are that it is.

Fig. 1128.

Red is the usual color of Phalloids, and this specimen seems to be a white plant in Africa corresponding to a red plant in Australia. Curiously there is another similar case. Laternea angolensis known scantily from Africa, is a white plant corresponding to Laternea columnata, a common red plant of the American tropics.

Clathrus camerunensis is evidently a rare phalloid. This is the first collection in South Africa, and but a single specimen was found. Our best thanks are extended to Mr. van der Bijl for the photograph which we reproduce.

We believe it is the duty of the staff of all Botanical Gardens. in tropical countries, to have a series of photographs of their Phalloids prepared. The gardeners should be instructed whenever they notice a Phalloid, to bring it to the office and have it photographed. Even if not directly interested in mycology, they should aid by photographing the curious Phalloids when they are noticed growing. Only by this means will a final, accurate knowledge of the subject be attained. We shall be glad to receive the photographs, name them, and if a good photograph of the specimen has not been published, we will publish it with due credit.

POLYPORUS RHEADES, FROM MISS A. HIBBARD, MASSACHUSETTS (Fig. 1129).—This is exactly the Swedish plant called Polyporus vulpinus by Fries, and it is the first time it has been found in the United States. We have common in our Southwest and Western States (New Mexico to California) a large form on Oak called Polyporus corruscans (also in this county Polyporus dryophilus), but this large form is rare east of the Mississippi.

Fig. 1129.

Morgan found it at Cincinnati and Sterling in New Jersey, but even this form has never been found in the New England States. Miss Hibbard's specimen is exceptionally fine, as shown in our photograph, and it is seldom that the surface hairs are so well preserved. The name that Fries gave it, vulpinus, would have been most appropriate, for the hairs are just the color of a red fox.

Some years ago (1895) Peck found in New York a Polyporus that he told me he never collected since, and the specimen is no longer preserved. He published it as Polyporus perplexus. Murrill takes this name for the common Polyporus cuticularis, which as I have before stated was rather an absurd conclusion, in view of the fact that Murrill had never seen a specimen of Polyporus perplexus, and Peck who knew the common Polyporus cuticularis well, had correctly, published Polyporus perplexus because he found it different. From Peck's description, and from Miss Hibbard's finding of this rare plant, it is extremely probable that Polyporus perplexus was based on Polyporus rheades.

SEBACINA AMESII (Fig. 1130).—(Compare Myc. Notes, p. 576.) Twenty years ago we gathered this plant and photographed it. We sent it to Prof. Burt, but he did not pass on it, stating that the hymenium was not formed. It has always been a mystery to us, for it was too thick and soft and spongy to be Sebacina incrustans, which is the only similar plant we know. We found the photograph the other day and recognized it as surely the same plant we named for Mr. Ames. We have never seen the plant growing since that day twenty years ago. It must be of very rare occurrence, as it is not, as far as we can make out, included in Prof. Burt's recent summary of the American Sebacinas. As to generic name it might be changed on a strict limitation of Sebacina to resupinate species, on the same principal that Tremellodendron was proposed, but I should consider it as artificial classification. Another species in the same section has recently reached me from L. J. K. Brace, Bahamas.

Fig. 1130.

CATASTOMA ATER, FROM I. M. JOHNSTON, CALIFORNIA (Fig. 1131).— About an inch in diameter. Endoperidium thick, black, smooth, shiny. Endoperidium adherent in a few patches, but not as a cup at base of the plant. Sterile base none. Gleba dark, but no purplish tinge that I can note. Capillitium 5–7 mic. thick, colored, broken into short pieces, often with short branches. Spores subglobose or slightly oval, 4–5 mic., strongly apiculate, minutely rough.

Fig. 1131.

This impressed me at once by its exceptionally black endoperidium. It has the habits and I thought at first was a Bovista, but the capillitium is of a Catas-

toma, and in these intermediate species the capillitium characters decide. It is not a true Catastoma, however, in the "type idea" with "mouths down," but there are several species of Catastoma that will not stand that test.

ISARIA BYSSOIDEA, FROM H.M. FITZPATRICK, NEW YORK (Fig. 1132).—This was well illustrated by Bulliard (t. 415) as Clavaria byssoides and referred by Fries to Ceratiomyxa mucida (a Myxomycete), which it evidently is not. The generic reference to Isaria is only a convenience, for it probably is the conidial state of some other genus. It practically dropped out of recent mycology, for Fries' reference disposed of Bulliard's figure, and as no one seems to know what it really is, it has been passed, as far as I know. It is probably not the condial state of any Xylaria as has been suggested, and it would be of the utmost interest if Mr. Fitzpatrick will trace it into its perfect state and find out what it really is.

Fig. 1132.

TREMELLA MARMORATA, FROM E. B. STERLING, NEW JERSEY.—We have seen but two specimens of this, one the type at Kew, the other sent us by Mr. Sterling some years ago. We think it should be made into a new genus for it is not a Tremella in several respects, although closely allied. The substance is but little gelatinous, more cartilaginous, although it swells and becomes soft on prolonged soaking. The color (dried) is dark brown, that of the context yellowish. The surface as described by Berkeley is cerebriform. The basidia are not strictly the Tremella type, but are club shape. They are hyaline and faintly cruciate, parted. We showed them to our artist and told her to draw what she saw. The result (Fig. 1134) is an ordinary clavate basidia, but it is not accurate, for by close observation and with a knowledge of what they ought to be, we found faint, longitudinal septations. At first we did not see them and supposed that we had a (half) tremellaceous plant with ordinary clavate basidia. It illustrates the difficulties of present classification when the whole thing rests on the basidia.

Fig. 1133.

Fig. 1134.

Tremella marmorata was named by Berkeley from a specimen collected in South Carolina. Berkeley compared it to Naematelia encephala, but I see no resemblance whatever. He named it from the "marbled" appearance within, which is also not very obvious to me. I think it ought to be made into a "new genus," based on its slightly gelatinous nature and the different shape of the basidia.

POLYSTICTUS CRYPTOMENIAE, P. VAN DER BIJL, SOUTH AFRICA (Figs. 1135 and 1136).—We adopt for this the only certain name we know as named by Hennings from Japan, types at Berlin. It is very doubtful, however, if it is other than the Eastern form of the common Polystictus pinsitus of the American tropics. It is thinner, whiter, softer and has somewhat smaller pores, which is all the difference, and that not enough to make a species. Recently it has been found in the Philippines and referred to Polystictus hypothejus as named by Kalchbrenner from Australia. I judge the reference, while probably correct, must have been from the description, as I found no specimen either at Kew or Berlin. It may be the plant, but it does not answer Kalchbrenner's figure, which shows small pores with thick dissepiments, just the contrary to this, and to what Kalchbrenner described. But when a man says one thing and shows another, how does anyone know how to take him? I would rather not take him at all. In addition, the specimens I have from Australia, which are probably the original of Polystictus hypothejus, are closer to Polystictus pinsitus than they are to the Philippine and African form. In this connection, however, Henning's spore record "globose flavida verrucosis 5½–6½" is absurd. No such species ever had such spores, and if Hennings had known much about the subject, he would have known it. He probably saw some puff ball spores that were dusted on it. Fries named a plant from Guinea Polystictus expansus, which we do not question from the description is the original name, but in absence of type we use a later name.

Fig. 1135.

Fig. 1136

POLYPORUS VANDERYSTII, FROM P. HYAT VANDERYST, CONGO, BELGE (Fig. 1137).—Pileus thin, brittle, 2–3

cm. wide, with a glabrous, pale yellow surface. Stem mesopodial 2–3 cm. long with a thick, rooting base. Pores medium, shallow, somewhat angular, pale yellow. Spores narrow elliptical, 4–5 x 8–10 mic. hyaline, smooth, guttulate.

This evidently grew in sandy soil, and has a conspicuous rooting base. It belongs in section (Lentus) 45c of Stipitate Polyporoids. There is a species named from Africa Polystictus Zenkeri, which reads somewhat the same, but it belongs to the section Microporus, and is close to Polystictus xanthopus, in fact, a pale form of it, I think.

Fig. 1137.

TRAMETES UNGULATA, FROM PROF. A. YASUDA, JAPAN (Fig. 1138).—As named by Professor Yasuda. This, as stated by the author, is surely only a hymenial variant of Daedalea ungulata (cfr. Myc. Notes, page 550), and both have same context color and are intimately connected with our common Lenzites saepiaria. Neither of these Japanese forms occurs with us.

Fig. 1138.

SCLERODERMA COLUMNARE, FROM GEORGE BROWN, NEW ZEALAND.—Most Scleroderma have a rooting, stem-like base, and it is rarely that specimens are received with distinct stipes. These stipitate specimens have been named, of course, as species, but it is my belief that they are variations of the common, subsessile species Notwithstanding they form a new genus (sic) in Saccardo; viz., Areolaria in part.

Scleroderma columnare (Fig. 1139) named by Berkeley from Ceylon is stipitate Scleroderma Cepa. This collection from Mr. Brown is the second known to me.

Scleroderma nitidum (Fig. 1140) named by Berkeley from India is a stipitate Scleroderma verrucosum. It is only known from the type and two collections that I have from Edouard Luji, Congo, Africa, and Rev. Torrend, Brazil.

Scleroderma lanosum (Fig. 1141) known from type only, Java, has no corresponding subsessile form.

In addition, I have a stipitate Scleroderma tenerum from Mrs. Whetstone, Minneapolis, but I never gave it a name.

These seven collections are all the truly stipitate Sclerodermas known to me, and they are evidently rare.

Fig. 1139.

Fig. 1140.

Fig. 1141.

POLYSTICTUS STEREOIDES, FROM REV. C. TORREND, BRAZIL.—Viz., the Polystictus form of Daedalea stereoides, with round (not elongated) pores. We get Daedalea stereoides frequently from Rev. Torrend and Rev. Rick, of Brazil, but not from other countries. The species was named by Fries from Costa Rica and the type (Fig. 1142) is still in existence. Usually the pores are daedaloid, but in this collection (Fig. 1143) they are round.

Fig. 1142.

Some confusion has been introduced by the name stereoides. Fries gave the specific name

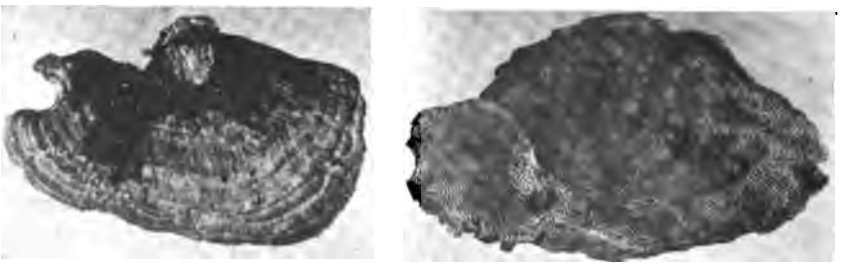


Fig. 1143.
Polystictus stereoides

to a Polyporus in Sweden and a Daedalea in Costa Rica. The Swedish plant is not authentically known, but that name was dug up, and applied to Daedalea cervina (or mollis as called) as Trametes stereoides.

Fig. 1144.
Cantharellus clavatus.

In my belief, the evidence does not justify its use in connection with the Swedish plant, and this plant has nothing in common with Daedalea stereoides of Brazil.

CANTHARELLUS CLAVATUS, FROM W. T. MACCLEMENT, NOVA SCOTIA (Fig. 1144).—This is a rather rare species, both in Europe and the United States. It grows in coniferous woods, and in this country is rarely found in our northern states. The hymenium is of thick, obtuse gills, purplish when fresh. The gills when well developed (see our figure) are more pronounced than those of Cantharellus cibarius. Notwithstanding the evident gills, Fries called it Craterellus clavatus, and has been mostly followed, but if it is not a Cantharellus, then there is no use trying to maintain the genus.

Though a relatively rare plant, it has been illustrated a number of times. Good figures were given in the old work of Schaeffer, and well colored, that is in the well colored copies of Schaeffer. But Schaeffer's work was colored by hand and some copies are very poor. It had a number of names in the very old, illustrated works, Merulius violaceus, Clavaria violacea, Clavaria elveloides, Elvela carnea, Elvela purpurascens. Persoon first brought them together and named it Merulius clavatus, as Cantharellus of today was included in Merulius by Persoon. A specimen is still preserved under the name in Persoon's herbarium. Fries (erroneously in my opinion) put it in the genus Craterellus, but (strangely) accepted Persoon's specific name. I suppose it has been juggled recently, but not much attention is paid to the name jugglers nowadays, and in the Agarics we have quit trying to keep tab on them.

The spores which I measured, 6 x 16, are not hyaline, but have a pale tinge of color, hence Patouillard discovered it was a "new genus" Nevrophyllum clavatum, and gave a figure (to carry out his name) which is about ten times deeper in color than they are. In this country Peck found it, and not finding it in Cantharellus in Fries' work, named it Cantharellus brevipes. I have always believed that if Fries had had it right, Peck would have gotten it right, for he was a close student of Fries' work. However, anything he could not locate in Fries was a "new species." Prof. Harper corrected Peck's name, and gave some fine figures of it in Mycologia (1913), and was the first to get it straight in this country. I have a specimen from Prof. Harper, Illinois, also Weir, Idaho. When I was in Sweden, someone sent Mr. Romell a specimen, which was quite a rarity to Mr. Romell. He gave it to me, and from this specimen our photograph (Fig. 1144) was made. I never saw the plant growing.

LENZITES SUBFERRUGINEA (DISTANT GILLS), FROM J. UMEMURA, JAPAN.—In the United States the Lenzites are quite uniform as to species and there is never any trouble in referring them. In Japan they are variable and when a correspondent sends two collections, as Fig. 1145 and Fig. 1146, in the same package, it is embarrassing to refer them to the same species, and yet I think they are forms of the same species. Lenzites subferruginea, in its varying forms, is the common species in Japan. We have seventeen Japanese collections. It varies in color from brown to bright reddish brown, the

latter, approximately our Lenzites saepiaria, but with a smooth surface. It varies from thin, close gills to thicker, more distant gills. In our Note 363, Letter 60, we sorted out the Japanese forms into four groups. We did not give them definite names even as forms, simply numbered them. We present two figures, both received from

Fig. 1145.

Fig. 1146.

J. Umemura, both of which we refer to Lenzites subferruginea, but it would probably be better if they had different names. And yet if we had names for the extreme forms, it would only increase our troubles in referring the many intermediate collections that we get.

POLYPORUS GRANTII, FROM J. M. GRANT, WASHINGTON (Fig. 1147).—White, spathulate to a rooting base. Surface smooth, apparently a little glutinose when fresh. Context white, hard. Pores minute, white. Spores (if correctly seen) globose, 6–7 mic., minutely rough.

Fig. 1147.

Based on a single half specimen (62) from J. M. Grant, Washington. It grew on a log. At first I thought it was Polyporus osseus, one of our rare species, which with us is usually greyish, but in Europe is white, but the spores of the two species are entirely different, if I see them correctly. The habitat also differs. When fresh the plant was probably slightly viscid as Abies needles are adherent to the surface.

In this connection Murrill does not seem to have gotten a correct line on Polyporus osseus. Although rare, we have probably a dozen collections from the United States. It does not occur in Murrill's work, and only recently we noted that he had labeled a specimen from Washington, "Polyporus Zelleri."

STEREUM (HYMENOCHAETE) LIRATUM, FROM J. UMEMURA, JAPAN (Fig. 1148).—The character of this species is the raised zones or ridges as shown in our photograph. Otherwise, as to color, surface, setae, etc., it is the usual species, such as Stereum tabacinus. We only know this zoned plant from Japan. Some years ago we received it from Prof. Yasuda (cfr. Letter No. 46), but we have misplaced the specimen and we believe we did not name it.

Fig. 1148.

CYTTARIA GUNNII.—I am pleased to present some additional information on this plant, communicated in a letter by Charles C. Brittlebank, Melbourne, Australia. "In your publication you state that Cyttaria Gunnii is only found in New Zealand and North Tasmania. This fungus is found in Victoria, both in the southeastern and southwestern parts. In all of the descriptions given of this fungus, there is none which gives all details. Yours is the best which I have seen, but asci and paraphyses are not mentioned. The following description is made up from the fresh material:"

"Sporocarp tawny or yellowish brown, subpyriform or wedge shaped, 20-25 mm. diam. x 15-30 mm. long, at first smooth, later distinctly alveolate. Locules subglobose, numerous, average 1½-2 mm. at first closed, later torn or split, exposing orange yellow lining. Asci cylindrical, shortly stipitate, 130-140 x 10-18 mic. rounded at apex, then truncate. Orifice turning blue with iodine, 8 spored monostichous. Paraphyses filiform, rarely branched, slightly clavate at tips. Spores globose 14-16 mic., very coarsely granulate. Sporocarps vary in number from a few to 34-40, seated on swollen and distorted living branch of Nothofagus Cunninghamii."

LYSURUS SINENSIS.—Professor N. Gist Gee, Soochow, China, who originally sent these specimens in formalin, as illustrated in Mycological Notes, page 718, writes me that the plant occurred in the campus of the university, six or eight years ago, but has not been noted since. He sent me sketches of various specimens that he has preserved in alcohol, and they show much variation as to the terminal tip, although all are apparently furnished with it. In some of them the tip is hardly more than three or four mm. long, and most of them have a tip about a cm. The question whether this is the same as Lysurus Mokusin is therefore unsettled. It may develop that Lysurus Mokusin has a terminal tip, and that originally it was short and not noted by Father Cibot.

Professor Gee also writes me that the name Mokusin probably refers to a district rather than a province of China, and that it is now spelled Mokanshan.

POLYSTICTUS CUNEATUS, from J. M. Grant, Washington. This is a peculiar species of the West and rather common. Ellis first got it from Macoun, and named it in his herbarium, but gave it a not very appropriate name. It is white when fresh, but discolors in time. I took Polystictus cuneatus and Polystictus Sequoiae to be discolored specimens of same species, but on a recent visit to New York I noted that Polystictus Sequoiae had brown context; in fact, I find on comparison it is the same as Poria carbonaria. Hence I will have to revise my determinations of Weir, Idaho (50) (94), and Yasuda, Japan (407), which should have been determined as Polystictus cuneatus instead of Polystictus Sequoiae, which at that time I supposed was a synonym. (Cfr. Mycological Notes, p. 600.)

MYCOLOGICAL NOTES.

BY C. G. LLOYD.

No. 54.

CINCINNATI, O. JUNE, 1918.

PROF. THOMAS H. MACBRIDE

MYCOLOGICAL NOTES

Issued by C. G. LLOYD.

224 West Court Street, - - CINCINNATI, OHIO.

SUBSCRIPTION PRICE.—A little personal interest on the part of the recipient in picking up and sending to my address, specimens of the larger fungi. All are desired excepting specimens of fleshy Agarics. Simply dry the specimens and send them in.

PROFESSOR THOMAS H. MACBRIDE

The photograph of Prof. Macbride, presented in this issue, shows character in every line. It was made by Curtis, who has an enviable reputation for his artistic work with the Indians. That he is equally at home with the "pale faces," this photograph evidences.

Prof. Macbride has for many years occupied the chair of Botany in the State University of Iowa. He has always had a leaning toward mycology, many years ago making a general account of the larger fungi of Iowa. For the last twenty years he has specialized on the Myxomycetes, and is today *the* American authority on this interesting group. His book, "The North American Slime-Moulds," is a practical exposition of the subject, and the only serviceable manual we have in the United States on any section of Mycology. This work was issued in 1899, but I believe is now out of print. It is said that a second edition is now under way. Let it be hoped that Prof. Macbride will not mar this second edition with the date dictionary changes introduced in Miss Lister's second edition.

It has been my pleasure to meet Prof. Macbride in two of his Cincinnati visits. One is charmed with his personality and culture, his eagerness to search literature and discuss problems connected with his subjects. The last year or so he has spent mostly on the Pacific Coast, and has surely spared no pains to collect material for the second edition of his work.

CORDYCEPS SINENSIS, FROM N. GIST GEE, CHINA

"Used in medicine by the Chinese." This is the celebrated "Chinese plant worm" known in connection with Chinese materia medica for more than two hundred years. It was figured by Reaumur

in a French periodical in 1726. A full account of it is given in Cooke's Vegetable Wasps from which this paragraph is taken. The old Chinese writers considered it an herb during the summer season, which changed into a worm as the winter appears. The Chinese name "Hia Tsao Tchong" literally translated "summer grass—winter insect." The plants with the dried caterpillar are tied up into little bundles and sold in the Chinese shops. Our Fig. 1149 was made from specimen sent by E. B. Sterling, who purchased it in a Chinese pharmacy in Denver, Colo.

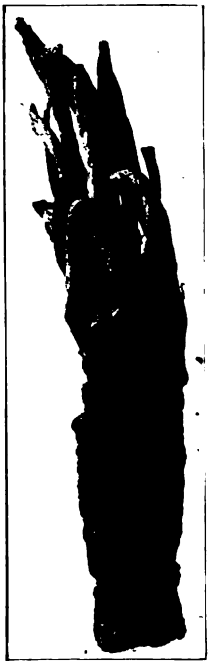


Fig. 1149

Professor Gee advises me—"The Soochow medicine shops claim that it comes from Szechuen. The price is cheap. We bought eight or ten of them for three cents Mexican. They are all badly damaged through handling, and by the time they reach us here it is very hard to tell anything about them."

Professor Gee has undertaken to learn from its source the history of this plant in Chinese medicine and pharmacy, and the history of its collection. He has written to a number of his friends in the remote districts of China, from whence the plant is said to come, and we hope to give, through his investigations, the first correct account regarding the distribution and commercial history of the drug.

Professor Gee has favored us with the following collation that he has made from the Chinese Materia Medica and Natural History books.

NOTES ON CORDYCEPS SINENSIS

BY N. GIST GEE

From Bretschneider's Early European Researches into Flora of China.—Sent in 1723 with other drugs to Paris Academy of Sciences by Parennin. It is produced in Thibet and Szechuen.

From Wilson's Naturalist in Western China.—Obtained from Hsin Kai Tsze, altitude 8,200 feet above sea level. This is either in Thibet or very near the border. The tribesfolk collect and bring the Cordyceps along with them for sale. It is a valued product of the western uplands, where it is found from 12,000 to 15,000 feet above sea level.

The body of the caterpillar is yellowish, the fructification of the fungus black, the two together sometimes reaching 5 inches in length.

As a medicine it has a number and variety of uses. "Boiled with pork it is employed as an antidote for opium poisoning and as a cure for opium eating. Also with pork and chicken it is taken as a tonic and a mild stimulant by convalescent persons and rapidly restores them to health and strength."

From Stuart's Chinese Materia Medica.—Customs list gives Szechuen as the source. Not so rare as in the days of DuHalde and not so highly esteemed. It is sold

by weight. "It is considered to be restorative and tonic and is used in jaundice, phthisis, and in cases of injury of any serious nature."

Eaten with duck, the virtues are much increased. Put into the head of a drake before cooking the effects spread to all parts of the body. Action of this compared with ginseng.

From a Chinese work.—It is sweet. (In Chinese medicine there is a test for each kind of medicine, though the meaning of the test is not always the same.)

It is good for protecting the lungs, enriching the kidneys, stopping the flowing or spitting of blood, decomposing the spittle (a kind of discharge from the windpipe coming out through cough) and for curing consumption.

The best variety is produced in Kiading Fu in Szechuen Province. Those produced in Yunnan and Kweichow are considered second class.

In winter it lives in the soil and can move like a silkworm. Its body is partially covered with hair. When summer comes the hair grows up out of the surface of the soil, and the whole worm turns into grass. If it is not taken, the grass will again turn into a worm in the winter.—(Translated by a student.)

NOTES ON THE XYLARIAS

We shall be very glad to receive from any correspondents, particularly from tropical countries, specimens of Xylarias. We have done considerable work on the genus, and have photographs of all the historical specimens we noted in the various museums of Europe. Xylarias will be found abundantly in every locality, usually growing on rotten logs.

Fig. 1150

Fig. 1151

Fig. 1152

THE VARYING FORMS OF XYLARIA POLYMORPHA.—The problems that are constantly being presented in the deter-

mination of specimens are illustrated in our Figs. 1150 and 1151 of two collections of Xylaria polymorpha, received from D. B. Griffin, Vermont. They were sent as separate species, and if one were not familiar with the polymorphism of this appropriately named species they could well be so considered. If the specimen Fig. 1151 had been sent to Europe in the old days it would at once have been discovered to be a "new species." Fig. 1150 is the usual and normal form of Xylaria polymorpha, and nine out of ten collections will take this shape. Fig. 1151 was a single specimen collected by Mr. Griffin by a rotten log. Its shape was due to some unusual condition of its place of growth. Perhaps it started deep under the log, and had to develop a long stem in order to secure its "place in the sun," and when it had developed its stem its strength had been used up, and it compensated itself by reducing the length of the club. But it may well be asked how do we know they are the same species? There are certain characters that the same species always have. In the case of Xylaria polymorpha, a hard, solid white stroma, a wrinkled surface due to contraction (Fig. 1152 enlarged), perithecia that do not protrude, spores about 25 mic. Of course there is some slight variation in these characters, particularly as to length of spores, which run from 24 to 32 mic. But in the main these characters are always present.

There are found in Saccardo four "varieties" of Xylaria polymorpha, based on shape. They are not worth the record. We have a proposed species in the United States, Xylaria grandis, which was based on large, obese specimens of Xylaria polymorpha.

Recently Saccardo illustrated a plant from Africa which corresponded to our Fig. 1151. He calls it a "new species," Xylaria ophiopoda, but there is no indication in his account or figure that it is other than an abnormal Xylaria polymorpha. One who makes a "new species" of every shape of Xylaria polymorpha that turns up would be kept pretty busy.

XYLARIA TUBERCULOSA, FROM REV. C. TORREND, BRAZIL (Fig. 1153).—Heads globose, 3–5 mm. in diameter, black, slightly rugulose. Stipe short, 3–5 mm., 1½ mm. thick, black, smooth. Context white. Perithecia imbedded, distant, but slightly protruding. Mouths with faint markings of white. Spores large, 12 x 36. This little globose species did not appear in our resume of the section (Myc. Notes, p. 727). It must be rare, for it is not included in Theissen's or Starbäck's accounts. Father Torrend found but two specimens. We would refer it to Xylaria haemorrhoidalis, a species named from Ceylon, to which are ascribed

Fig. 1153

Fig. 1154

similar large spores, but the description and Cooke's figures call for a sessile plant. We found no type at Kew. The features of these specimens are the globose heads, the distant perithecia, with faintly marked mouths, and the large spores. We present, Fig. 1153, plants natural size, and Fig. 1154, a specimen enlarged sixfold.

XYLARIA FUSCA, FROM J. E. A. LEWIS, JAPAN (Fig. 1155).—Clubs 4–5 cm. long, 8–15 mm. thick, smooth, even, obtuse, from a short stem. Crust thin, brown, smooth, perforate with the ostioles. Perithecia imbedded, in dark context. Context white, soft, spongy, not becoming hollow. Perithecia imbedded under the thin crust, not protruding. Spores 5 x 8–9.

Fig. 1155

We have known this species for some time from the United States, but have had no name for it. It is recorded as Xylaria castorea by Peck, and so determined by Hawley, but it is not possible to reconcile it to my photograph of the type of Xylaria castorea, nor to Berkeley's icones in Flora New Zealand. Xylaria castorea has no crust, and is a black plant with solid, hard, white context, in same section as Xylaria polymorpha. Xylaria fusca when young has a thin, brown crust about the color of a roasted coffee berry, but when old it becomes darker, but signs of the crust remain.

Fig. 1156

In addition to this collection received from Japan, I have specimens from Dr. R. P. Burke, Alabama, and one collection made near Cincinnati. Also a doubtful collection (flattened club) from Frank H. Ames, New York. We present a Fig. 1155 of two plants, natural size, and Fig. 1156, the surface enlarged sixfold.

XYLARIA STROMATICA, FROM REV. C. TORREND, BRAZIL (Fig. 1157).—Clubs slender, small, 8–10 mm. long, 1½ mm. thick, obtuse or mostly acute, black. Surface uneven, rugulose. Stipe short, 1–2 mm., slender, proceeding from a thin, black, carbonous hypothallus on the host. Stroma carbonous, no white center. Perithecia imbedded, partially protruding, forming the uneven surface. Spores 6 x 12. It

Fig. 1157

grew on an herbaceous stem, and the prominent character is the thin, black carbonous hypothallus forming spots on the host. I know this feature in connection with no other species. Otherwise the plant is close to Xylaria scopiformis.

XYLARIA GRACILLIMA, FROM REV. J. RICK, BRAZIL (Fig. 1158).—We take this in the sense of Father Rick, although not the same as interpreted by Montagne and Berkeley (Cfr. Large Pyrenomycetes, page 14), neither in the sense of Cooke, Thiessen nor Rehm. We do not know as to Fries, and think no one knows. In this sense the plant is very close to Xylaria scopiformis (Cfr. Myc. Notes, p. 675), but it is quite different. The perithecia are larger and freer, and of paler color. The mouths of the perithecia are marked with faint white spots. The fusiform spores 6 x 24–28, are much larger. It is also close to Xylaria albomaculata (Myc. Notes, p. 725), but spores much larger and the "white spots" faint in comparison.

Fig. 1158

RARE OR INTERESTING FUNGI RECEIVED FROM CORRESPONDENTS

CAMILLEA(?) SULCATA, FROM REV. C. TORREND, BRAZIL (Fig. 1159).—If this plant reached Europe in old times it has no doubt been named, as Hypoxylon. We have never worked over the Hypoxylons, but we find where Starbäck gave a photograph of it under the name "Hypoxylon(?) sulcatum." It is a question whether the plant should be classed as Hypoxylon or as Camillea. According to the old classification there was really no definite distinction between them. However, in the sense of the recent pamphlet on the arrangement of the perithecia it would be a Camillea. The surface is peculiarly radiating pitted, as shown in our figure. A section shows context entirely carbonous, with the perithecia in one layer. Whether there is any connection in the arrangement of the perithecia and the peculiar pits of the surface we could not decide. The spores found in a mashed fragment are few and elliptical 6 x 8-10 and pale colored. How they are borne we can not say, but we found no indication of asci. Professor

Fig. 1159

Starbäck does not record any spores, but gave a photograph of the plant from which we were able to recognize it (as can anyone else) from our photograph. It is extremely probable, however, that the plant will be found with names in the museums of Europe, but the old authors did not illustrate it, and of course nothing can be told from their descriptions. Until someone works over the historical Hypoxylons in the museums of Europe nothing is really known about them.

SCLERODERMA SINNAMARIENSE, FROM V. DEMANGE, CHINA.—This was named by Montagne from South America, but is evidently rare, as these are the first specimens I have received. Scleroderma pisiforme, named from Africa by Hennings, is the same, and the smallest Scleroderma that grows. I had a suspicion that the species was the young of some other species, but these are surely not. The gleba is mature and unusually black and hard for a Scleroderma. The peridium is thin, yellow and rigid. The spores are typically those of a Scleroderma and tubercular, showing no tendency to reticulation. We present a photograph of the type at Paris. (Fig. 1160.) Mr. Demange's specimens are but little larger—the largest measuring a cm., which is probably as large as the species becomes.

Fig. 1160

TRAMETES ARGYROPOTAMICA, FROM REV. C. TORREND, BRAZIL (Figs. 1161 and 1162).—As named by Father Torrend, and on looking up the original description I do not question but that it is correct. It is a fine species, in spite of its uncouth name, and is the first I have seen. The most prominent character was not noted in the original description. The spore we determined

Fig. 1161

Fig. 1162

as large, hyaline 8 x 20 mic., with truncate base, but on a subsequent examination we failed to find them. We therefore do not announce

this until we are more sure of it. The hymenial surface is pubescent with protruding hyphae (cystidia?) which are paler and somewhat modified on the exserted parts. The surface of the young plant is soft, yellow, velutinate, which feature disappears and becomes dark in old plants. The context and pores are aniline yellow when young, becoming darker in old specimens. The pores are medium, about ½ mm., and irregular, angular. The plant is really a Fomes, as old specimens have distinct pore strata.

BAEOMYCES ROSEUS, FROM LIZZIE C. ALLEN, MASSACHUSETTS, DETERMINED BY PROF. BRUCE FINK. We present a photograph (Fig. 1163) of this little lichen, as it was sent to us as a fungus, and is liable to be mistaken by anyone. It is the first time that we have received it, but we judge from Prof. Fink's remarks that it is a quite common species. It grew on the bare ground, and the minute green thalli covered the surface of the ground. The fruiting bodies (apothecia) look like little Clavarias growing in the moss.

Fig. 1163

POLYPORUS MYCLODES, FROM DR. J. BARTON CLELAND, N. S. WALES (Fig. 1164).—We refer this to Kalchbrenner's name, from Australia, rather than to propose a new one, though it is not "infundibuliform" nor "deeply umbilicate." I found no specimen in any museum, and it probably does not exist; hence if not right, probably no one will ever know the difference. Excepting shape, it agrees with the description. Notwithstanding it is so different in surface, absence of scales, small pores, and general appearance from Polyporus squamosus, it is closely allied. The black stem,

Fig. 1164

color, soft flesh, and the spores, which are exactly the same, show its relationship. In fact, for me it is a form of Polyporus squamosus. This species, fairly constant and too abundant in Europe, seems to vary much in Australia. This is the third collection we have gotten from Australia, and no two of them alike.

Polyporus myclodes was given in the Handbook as Polyporus myelodes, and Cooke states myclodes in Saccardo is a typographical error. If true, it is the same "error" Cooke makes in his index, and same "error" Cooke made originally when he published it in Grevillea. Besides Kalchbrenner states that the name is from "Myclos." The determination is very doubtful, but it is better than to propose it as a "new species."

TRAMETES PUSILLUS, FROM DR. S. M. STOCKER, MINNESOTA (Fig. 1165).—Pileus small, 1–1½ cm. dimidiate, white. Margin acute. Surface dull, faintly greyish, unzoned, very minutely pubescent. Pores white, small, round rigid, with white mouths. Cystidia none. Spores cylindrical, hyaline, smooth, 3 x 6 mic.

Fig. 1165

When I first saw this collection I thought of Fomes Ohiensis (Cfr. Fomes Synopsis p. 218), but it did not look exactly right. The spores I found were entirely different. I do not know of any other species, excepting Fomes Ohiensis with which it can be confused. The pores are not in strata, hence these specimens are not Fomes, but the species may turn out to be a Fomes, the same as Fomes Ohiensis, which was thought at first to be a Trametes. The plant is quite close to a form of Trametes sepium we often find with little pilei, but its habits are different and its pores much smaller.

EXIDIA UVAPASSA, FROM J. E. A. LEWIS, JAPAN (Fig. 1166).—We name this simply to have a name for it in our herbarium. It is not one of our American species. When soaked it is depressed, brown, cushion shape, wrinkled, and looks exactly like a dried raisin. A section shows hyaline, gelatinous texture, with brown, hymenial surface. Spores are hyaline, 6 x 16, cylindrical, curved, and of the same type as Hirneola spores. Basidia globose, 12 mic. cruciately divided, imbedded below the brown, cortical layer. The species is quite close to Exidia recisa, same color, but has hymenium amphigenous, and the cushion shaped form is entirely different.

Fig. 1166

CLADODERRIS THWAITESII, FROM V. DEMANGE, CHINA (Fig. 1167).—This has heretofore been known from two inadequate specimens at Kew from Ceylon named by Berkeley. I did

not include it (excepting incidentally on page 11) in my synopsis of the genus. As will be seen from the photograph of this fine collection from Mr. Demange, it grows connate-caespitose. The shape is narrowly infundibuliform, and it has but a thin, tomentose layer. The folds of the hymenium are exactly the same as those of Cladoderris dendritica. Cystidia are slender, hyaline, and collected in clusters. Spores globose 4 mic., hyaline. It is probably an extreme form of Cladoderris dendritica, but well deserving of a name.

Fig. 1167

FOMES MARGINATUS FROM DR. S. M. STOCKER, MINNESOTA (Fig. 1168).—We take it in the sense of Fries, though we believe it is only a form of the common Fomes pinicola growing on frondose wood. Fomes marginatus of Persoon is surely Fomes pinicola, as is evident from Schaeffer's figure, which Persoon cites, and some confusion has been caused recently by using the name as a juggle for Fomes pinicola. Fries renamed Fomes pinicola which had several names before, and this plant which he considered a distinct species, he called Fomes marginatus. At first view I was puzzled as to the specimen, for externally it does not suggest the common form of Fomes pinicola. The surface is smooth with no reddish, resinous exudation, usually so characteristic of Fomes pinicola. The old growth is dark, almost black, and the new (marginal) growth is white. The context color is pale yellow, as in the type form. We consider Fomes marginatus as a form of Fomes

Fig. 1168

pinicola, differing in the absence of the red, resinous surface. It is the same difference exactly as exists between Polyporus Curtisii and Polyporus lucidus, and most every writer holds the former as a distinct species. The name Fomes marginatus has recently been used as a juggle for Fomes pinicola, the usual pine woods form. But it is not very logical if one writes (Schaeffer) Cooke after the name, for Schaeffer illustrates Fomes pinicola under three different names. Still less is it reasonable to write "Cooke" after it for Cooke knew the plant as Fomes pinicola.

IRPEX SUBCORIACEA, FROM REV. J. RICK, BRAZIL (Fig. 1169).—Context color about taupe brown (Ridgway) with a violaceous tint. Hymenium daedaloid, pubescent under the microscope with dense, projecting, colored hyphae that are not specialized, or with a few (rare) typical setae. Spores unknown. This is a rare plant in the American tropics. The type at New York was collected in Nicaragua by Shimek, but Ellis distributed it (No. 90) misnamed Irpex coriaceus as

Fig. 1169

Fig. 1170

collected by Chas. L. Smith. This collection and two that I have received from Rev. Rick are all that are known. Murrill named it from the Ellis specimen and misdetermination, as Irpex subcoriaceus, but it has no suggestion to me of Irpex coriaceus.

To the eye it is a better Daedalea, but the hymenium is composed of broad, flat teeth with the daelaloid effect. We do not recall any other species of Irpex where the teeth are all even and the same length. We present a photograph (Fig. 1169) of the hymenium surface, and also an enlargement (Fig. 1170) showing the edges of the teeth.

PLEUROTUS SAPIDUS.—We present on the opposite page a photograph of Pleurotus sapidus that impresses us as being the finest photograph we have ever seen of a fungus subject; not only from a

Fig. 1171

mycological point of view, but from an artistic point of view, and we think would take the prize of any exhibit of photographic subjects. The grouping of the plants, the background, everything is in delightful harmony.

The photograph was sent to us by E. B. Sterling, who is the examiner for State Inheritance Taxes of the State of New Jersey. Mr. Sterling is actively engaged in his duties, but finds time as a recreation to work on fungi, and is one of the authorities in his section on matters mycological.

The photograph was made by Edgar D. Coleman, of Trenton, N. J. He indulges in photography as a pastime. We have no hesitancy in saying that it is the best photograph of a fungus subject we have ever seen, although since we have had our plate made we do not believe it does justice to the original.

CAMILLEA BOMBA, FROM REV. J. RICK, BRAZIL (Fig. 1172).—We were at first disposed to question this collection (Fig. 1172), consisting of small plants, 3 mm. clustered and consolidated by a common stroma. Those we had seen before (Cfr., Fig. 844). Large Pyrenomycetes) were larger (about 5 mm.), and erumpent singly from the bark. On comparison, however, we think them the same species but different forms. Camillea Bomba is evidently a frequent species in the American tropics, and this is a fine collection.

Fig. 1172

ISARIA SPHECOCEPHALA(?), FROM C. A. O'CONNOR, MAURITIUS (Fig. 1173).—This is probably the Isaria condition of Cordyceps sphecocephala, but the connection has not been established. The photograph (Fig. 1173) that we present of Mr. O'Connor's fine specimen will locate it definitely, and we hope someone will trace it into its Cordyceps form. We have gotten the same form from A. H. Ritchie, Jamaica. The fungus consists of many long, rigid, dark, unbranched threads proceeding from various parts of the body of the wasp. It is not in fruit, hence doubtful even if it is an Isaria. It is evidently the same as figured by Felton in Phil. Trans., but no name was given to it.

Fig. 1173

There has been an Isaria named growing on wasps, viz: Isaria Saussurei from Cayenne, but this was described as "orange" color and hence probably was not this plant. This also was supposed to be the Isaria form of Cordyceps sphecocephala. Our best thanks

are extended to Mr. O'Connor for this fine specimen. We hope the entomologists of the tropics will trace definitely the preliminary stages (Isaria) into the final Cordyceps stage, and establish their connection.

SEBACINA SPONGIOSA, FROM L. J. K. BRACE, BAHAMAS (Fig. 1174).—Encircling the base of small shrubs, thick (2-3 cm.), fleshy; Surface minutely pubescent, soft, brown; Substance white, soft, of branched hyphae. Hymenium, when young, even, cracked, purplish brown, dark, almost black, with purplish tint when old. Basidia colored; globose, imbedded, cruciately parted. Spores 5 x 10, hyaline, apiculate, with a large gutta. The membrane is so transparent it is not easily seen.

Fig. 1174

This species is very similar to Thelephora albido-brunnea and Sebacina Amesii in its habit of growth, but is a thicker, more fleshy species than latter. It is closely related to Sebacina Amesii (Cfr. Myc. Notes, p. 576), but differs in the purplish color of the hymenium, the deep color of the basidia, and the more fleshy, firm context. Both species are evidently very rare plants. Type from L. J. K. Brace, Bahamas. The genus Sebacina is defined as being resupinate, so this species and Sebacina Amesii could easily be erected into a "new genus," for which the name Atkinsonia has been proposed (Cfr. Myc. Notes, footnote p. 576).

COMMENTS ON THE MYTHS OF MYCOLOGY

We judge that our recent pamphlet has created somewhat of a mild sensation. We append a few letters received; of course, without giving the names of the writers.

"Please accept my thanks for the fine package of your papers just at hand. My knowledge of Mycology is quite elementary, but all you write is bright and interesting—perhaps to some too interesting. But I wish to mildly protest against the 'creation des especies' on the 'Tout-Puissant.' This is a work too imperfect and too full of blunders

to come from that high source. To me it seems that the All-Powerful creates the individual; the grouping them in varieties, species, genera, and all the other categories of taxonomy, is too evidently the imperfect work of men, and they should shoulder the credit or the discredit of their 'creations'."

"Part One of the 'Myths' is certainly racy reading—no space wasted on periphrasis. It's a breeze that will do mycological readers good from the amusing account of Prof. Atkinson's rencontres with the European scientists to the taxonomic pi of the Saccardo-Clements' Lycoperdaceae. I hope that no other order in the book of keys is so badly mixed.

"The characters listed by the pioneer describers like Fries and Berkeley were sufficient to distinguish the limited number of species before them or in mind. Their successors to whom the types are inaccessible, if extant at all, make new species, the successors of the successors discover that the new are old and so on it goes, making the confusion worse confounded. The 'Myths' is an S. O. S. It will take me longer to read it the second or third time than the first."

"In thanking you for the recent installment of 'Myths of Mycology,' I take the liberty of felicitating you upon the cheerfully frank way you have handed it to the name tinkers.

"Everybody is so afraid of everybody else that it is refreshing to find one who dares express his opinions regardless of how the rest will like it. You are not likely to become popular with the fungus namers, but your remarks are highly edifying to people like myself who do not take too seriously the systematic work that emanates from certain sections of our country."

"I have just received and read with great interest, five papers, Mycological Notes 51, 52 and 53, Letter 66 and 'Myths' No. 1. I wish someone as competent would do the 'Myths' of Entomology in the same way. I presume you will keep on and I will be glad to see No. 2 when it comes out. Though someone (whose dignity is ruffled) may 'sandbag' you and prevent it."

"As a member in good standing in the Species Founders Union, I have read with great interest your 'Mycological Myths'. My work had been upon algae rather than fungi, but the general idea applies to both.

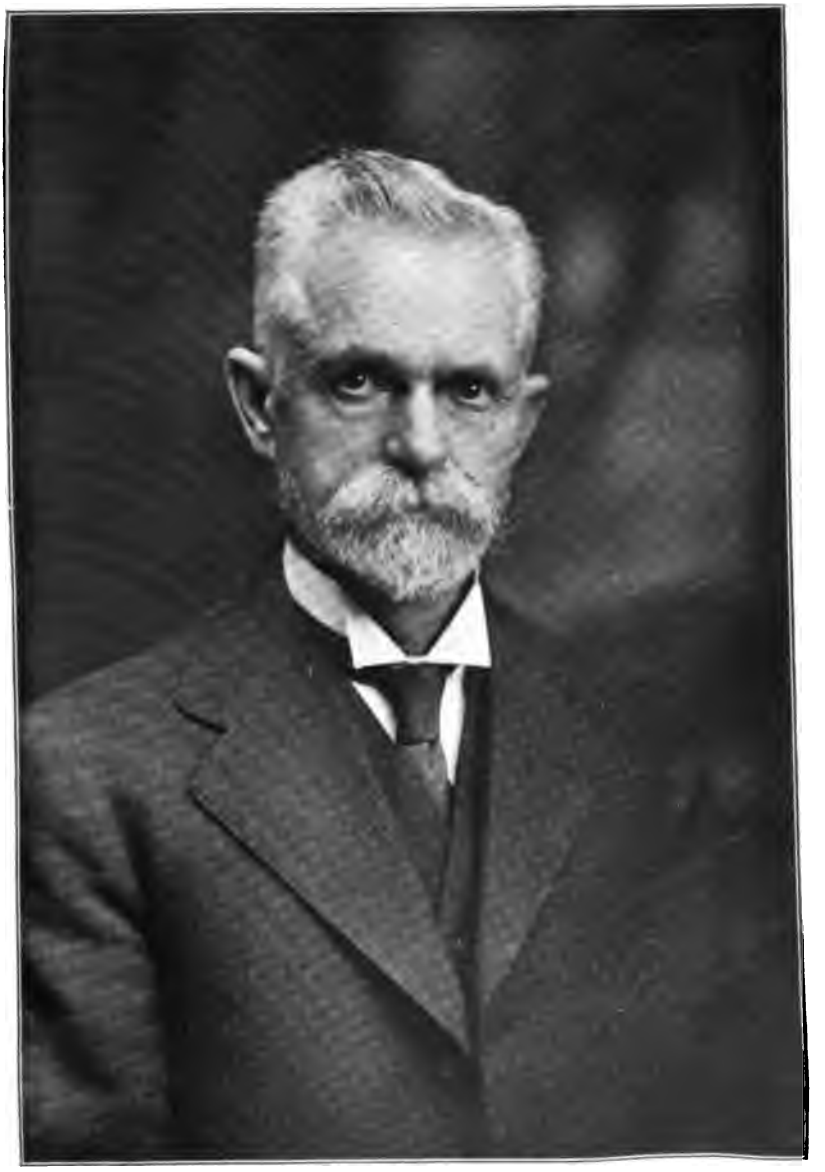
"I would greatly appreciate your putting me on the mailing list for the first and future numbers of 'Mycological Myths'."

MYCOLOGICAL NOTES.

BY C. G. LLOYD.

No. 55.

CINCINNATI, O. AUGUST, 1918.



JOHN DEARNESS

MYCOLOGICAL NOTES

Issued by C. G. LLOYD.

224 West Court Street, - - CINCINNATI, OHIO.

SUBSCRIPTION PRICE.—A little personal interest on the part of the recipient in picking up and sending to my address, specimens of the larger fungi. All are desired excepting specimens of fleshy Agarics. Simply dry the specimens and send them in.

JOHN DEARNESS

We print on our front page a photograph of John Dearness, of London, Ontario, one of the most ardent workers and collectors in American Mycology. His interest in the subject was enlisted first as a microscopist, in studying the beautiful forms offered to him of the Myxomycetes and other micro-fungi.

At the time when he took up the work, in the early eighties, Farlow, Morgan, Peck and Ellis were the leading mycologists in this country, and in securing names for his plants he came into close communication with these men. He corresponded for many years with the late J. B. Ellis, to whom he sent a large number of his specimens, and Ellis' exsiccatae and numerous articles naming the fungi collected by Mr. Dearness are lasting testimonials of his activities that will be cited for many years to come. Perhaps in few other collections will there be found as many historical specimens touching on our mycological flora, as are contained in Mr. Dearness' private collection.

Mr. Dearness has been located in a field highly favorable to mycological research, the Thames Valley, which extends for more than a hundred miles across lower Ontario. This valley is particularly rich in a variety of arboreal flora, especially suitable for the hosts of both biogenous and saprophilous fungi. It contains a mingling of the Carolinian and northern types, and many species occur that are not found, or at least are not recorded in the United States. While Mr. Dearness' specialty has been microscopic fungi, he has been an active collector of the larger forms, of which he has a comprehensive knowledge.

THE GENUS AURICULARIA

This is a familiar genus in almost every locality through the common plant usually called the "Jew's ear." It consists of foliaceous, gelatinous plants, with the hymenium normally on the lower side, and has cylindrical and septate basidia. The original species of Europe, which when dry is more coriaceous than most species, was strangely put by Fries in the section with Stereum, but it is typically gelatinous when moist. In our text books the species are found under two genera, Auricularia and Hirneola, but as explained further along we believe it is not practicable to maintain two genera.

AURICULARIA AURICULA-JUDAE. The common "Jew's ear" grows in probably every country of the world, both tropical and temperate. Our figure (1175) is made from a dried plant. In the

Fig. 1175
Auricularia auricula-Judae (Dried).

tropics it takes thicker forms called Auricularia polytricha which are more hairy, but in every essential it is practically the same plant. The "Jew's ear" is brown, soft, gelatinous when fresh, and always grows on rotten wood. The name is a slander on the Jews, but it dates back to the old herbalists.

AURICULARIA POLYTRICHA.—This is a tropical form of Auricularia auricula-Judae. It is thicker, has longer hairs, and the hymenium is often more purplish than the temperate region plant. The two grade into each other by so many intermediate collections

that it is embarrassing in practice to maintain different names for them.

AURICULARIA MOELLERII, FROM JOHN GOSSWEILER, WEST AFRICA.—For convenience in labeling we designate this as above, although we know it is only a form of Auricularia auricula-Judae, with the hymenium so strongly reticulate it is liable to be confused with Auricularia delicata. We have collections from Brazil embracing both this and the usual form. It is the same plant that Moeller and Bresadola had their controversy over (Cfr. Note 340). We present figure 1176 from dried specimens.

Fig. 1176.

As to the generic name, we have heretofore called it Hirneola, but there is no doubt it is the same genus as Auricularia, and it is misleading to keep up two names for the same genus. The mistake originated with Fries about seventy years ago, who conceived that Auricularia had an inferior hymenium and Hirneola a superior hymenium. That is an error (in part at least), but it was adopted and used generally in nomenclature ever since. I have noted the "Jew's ear" often, always with hymenium down, but Petch notes that the tropical Auricularia polytricha varies, usually having the hymenium superior, but often inferior or intermediate. We were under the impression many years that it was always true, and after we learned that it was not, we still continued to use Hirneola from habit. We shall have to recede now, however, and call it Auricularia auricula-Judae, for we can no longer maintain a generic name that we know was based only on a mistake.

AURICULARIA DELICATA (Fig. 1177).—This species is, we believe, quite different from the preceding, although Auricularia Moellerii seems to connect them. We found it common in Samoa, and it did not suggest to us the common "Jew's ear." It was of very pale color, and the folds so strongly developed it appeared almost polyporoid. The substance is more gelatinous, the surface glabrous, and we believe it is an entirely distinct plant from the preceding. We present a figure made from a fresh plant in Samoa. The plant has had a number of names, being the original of the genus Laschia, which since has acquired an entirely different meaning. It is still found in Saccardo, although as Laschia.

Fig. 1177.

There have been many so-called species, named mostly as Auricularia or Hirneola, and mostly from the tropics, which should be referred to the above three species, in our opinion. We shall not go into the details here, but most all the "species" found in Saccardo are about the same thing. The following are all the species of Auricularia that we recognize as having any value.

Auricularia auricula-Judae. The "Jew's ear." Cosmopolitan and very common in all temperate regions.

Auricularia Moellerii, a strongly reticulate form of above.

Auricularia brasiliensis, a rare, smooth, tropical form of the "Jew's ear." It is usually called Hirneola auricularis, but in putting it in Auricularia we adopt an old name to avoid tautology.

Auricularia polytricha, the tropical form of the "Jew's ear," thicker and more hairy.

Auricularia mesenterica. A European plant, strangely very rare in the United States, but frequent in some tropical countries.

Auricularia delicata. Tropical, glabrous with strongly folded hymenium, and more gelatinous than the above.

Auricularia squamosa. Known only from Africa.

Auricularia intestinalis. This rare species of which only two collections are known (Cfr. M. N., p. 708) passes now in our literature as Favolus or Laschia. It is really an Auricularia, or perhaps a better genus for which the name Poroauricularia has been proposed.

In addition basidia experts now add Auricularia reflexa, which is not gelatinous, and should form another genus. It is widespread, and has been named many times, usually as Phlebia.

Our literature is encumbered with 72 named "species" either as Auricularia or Hirneola, which in my opinion, with the exception of two which do not belong in this class, should all be referred to the above eight species (at least as varieties), and most of these are only synonyms.

THE SEAL-BROWN STEREUM

We have received from Edwin Cheel three species of Apus Stereum with dark, seal-brown pubescent pilei. One is the well known Australian Stereum illudens, the other two are not, we believe, named. We do not have either in Europe or United States any species of this color. The three species are distinguished as follows:

Context deep colored (brown) with dendrophytes.....Stereum illudens
Context deep colored (brown) without dendrophytes...Stereum deceptivus
Context pale with ducts.....Stereum Phoca

STEREUM ILLUDENS, FROM EDWIN CHEEL, AUSTRALIA (Fig. 1178).—Pileus effuso-reflexed; thin, conchoid, sub-

Fig. 1178.
Stereum illudens.

zonate with brown (Vandyke), scabrous pubescence. Context thin, deep brown, with deep colored hyphae. Hymenium purplish brown,

usually glaucous. Cystidia dense, hyaline with spiny processes (Fig. 1179) (dendrophytes).

This is a common species in Australia and I have a number of collections, but only from Australia. It was named Stereum illudens by Berkeley, and the name seems appropriate. It fooled Berkeley, for he determined other collections at Kew as Stereum albobadium, an American species not known in Australia. It fooled me for I named it (Note 155) Stereum spiniferum. It can always be readily known from the spiny cystidia (Fig. 1179). Another Australian species, but quite different, Stereum radiato-fissum (Cfr. page 746) has the same peculiar cystidia. The frustules of the type of Stereum simulans (named from Australia) that I have has dendrophytes and is same as Stereum illudens, although the hymenium is pale and has no purplish tint.

Fig. 1179.

STEREUM DECEPTIVUM, FROM EDWIN CHEEL, AUSTRALIA (Fig. 1180).—Pileus effused—reflexed, thin; surface brown (Vandyke) with brown pubescence, not zoned. Context thin, brown. Hymenium blackish plumbeus, usually (no doubt) glaucose. Basidia narrow, club shape, forming a pallisade layer. We name this deceptivum because one is liable to be deceived and take it for Stereum illudens. It is same as to color, but differs in surface hairs, which are not so coarse, and do not form zones. I can not make out surely the "cystidia," but it appears to me that they are filiform, hyaline. Surely they are not "dendrophytes" as in Stereum illudens.

Fig. 1180.

STEREUM PHOCA, FROM EDWIN CHEEL, AUSTRALIA (Fig. 1181).—Pileus thin, conchoid, zonate with brown (Vandyke) pubescence. Context thin, pale when dry with pale hyphae. Hymenium pale isabelline. Section shows thick ducts, which, however, are not darker than the tissue. Cystidia short; projecting, hyaline thin, not specialized. To the eye this is same as Stereum simulans, excepting the pale context. The ducts seen in a section show it when fresh is a "bleeder" and belongs in same section as our Stereum spadiceum. When

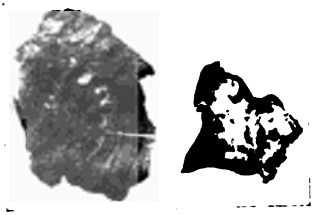


Fig. 1181.

soaked in water the hymenium turns brown. We doubt if a photograph (Fig. 1181) could be told from one of Stereum illudens.

RARE OR INTERESTING FUNGI RECEIVED FROM CORRESPONDENTS

POLYPORUS WILSONIANUS, FROM J. T. PAUL, AUSTRALIA (Fig. 1182).—Imbricate, from reduced, confluent base. Pilei 4-5 x 2-3 inches, one cm. thick. Surface irregular, scrupose, uneven, pale, with indefinite, brownish spots. Context white, thin, 4-5 mm. Pores small, round, or elongated, 8-10 mm., long, white. Cystidia none. Spores 3 x 5, piriform. I would enter this in section 82, although it does not suggest any other species in the section. It grew,

Fig. 1182.
Polyporus Wilsonianus.

imbricate, evidently from the side of a burnt log. There is a possibility that it is Polyporus Gunnii, a species of which I have no photograph or notes, and which is not recorded since it was named, years ago. We named this in Note 179, and came very near making a bull

and naming it a second time. We originally thought it was a form of Polyporus sulphureus, but this specimen did not suggest this species to us at all, and we discovered the error only by accident. Polyporus Wilsonianus is, I think, a valid Australian species, not known excepting in our collection.

SECOTIUM PEDUNCULATUM, FROM JAMES R. WEIR, MONTANA (Fig. 1183).—Peridium depressed, globose, smooth, white, obtuse. Stalk 2-3 cm., long bulbose at base. Gleba olive brown, composed of semipersistent cells. Spores subglobose, pale, smooth, 6-7 mic.

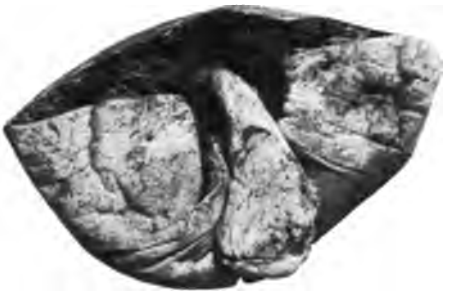


Fig. 1183.

The gleba and spores being the same as our common Secotium acuminatum, we would hold this as a pedunculate form. Ordinarily the species has a short stem (Cfr. Plate 13, Vol. I), but we have seen many specimens, and never before where the stem was developed enough to be a feature of the plant. There have been three other pedunculate Secotiums collected in this country which we have studied in connection with Mr. Weir's specimens.

SECOTIUM TENUIPES.—This species was named by Prof. Setchell, and is not uncommon under the leaves of Eucalyptus in California. In general size and aspect it resembles australe (Fig. 1184), but the large ovoid spores, 8-12 x 12-16 mic., and more fleshy texture and subhypogeal habits are widely different.

Fig. 1184.

SECOTIUM RUSSULOIDES.—This is a very rare plant in California named as Elasmomyces russuloides by Prof. Setchell. It differs from other pedunculate species in its globose, rough spores. The genus Elasmomyces, in my opinion, is not tenable. It was proposed on the character that the gleba cells are sublamellate on the lower margin, and the presence of cystidia. The former character is not distinct and the latter does not apply to Prof. Setchell's species. In habits this plant connects Secotium to the hypogaean families. It is found under leaves, half buried in the soil.

SECOTIUM AUSTRALE (Fig. 1184).—Peridium thin, pale, oblong, obtuse. Stipe 2-3 cm. long. Gleba dark umber brown. Spores small, 3-4 mic., dark, smooth, many with long hyaline pedicels.

We received this many years ago from W. H. Long, collected at Denton, Texas, and referred it at the time with doubt to Secotium coarctatum figured from Australia, and which corresponds in general appearance. We have since secured the type gleba of the Australian species, and find on comparison it is quite different. The color is pale ochraceous, and the spores subglobose 4-5 mic., are very pale color, almost subhyaline.

A CURIOUS FUNGUS, FROM JOHN GOSSWEILER, WEST AFRICA (Fig. 1185).—We have received from Mr. Gossweiler a most curious fungus, of which we present a photograph, Fig. 1185. It consists of a cottony material in which are imbedded little, globose bodies resembling peridioles. Our first impression was that it was a Nidulariaceae, but an examination of the peridioles did not disclose any spores or the structure of a peridiole. I have sent the plant to S. M. Zeller, an expert microscopist at work in the St. Louis Botanic Gardens. Mr. Zeller has formulated an opinion regarding the fungus that he will probably publish, and I will, therefore, not anticipate him.

Fig. 1185.

MUCRONELLA TENUIPES, FROM JOHN GOSSWEILER, WEST AFRICA.—Subiculum none. Clubs fasciculate, pendulous, dark, yellowish brown (when dried), 1-2 cm. long, unbranched, angular flattened (dried), borne on slender hairlike stems 1-2 cm. long. Spores hyaline, allantoid 1 x 4 mic.

Fig. 1186.

Fig. 1187.

Mucronella tenuipes.

The curious feature of the clubs borne on distinct threadlike stems is a feature heretofore unknown in this rare genus. We present (Fig. 1186) a photograph of the outer side, showing mostly the clubs and (Fig. 1187) the underside, showing mostly the stems. I have a photograph of Mucronella togoensis, named from Africa which is, I believe, Mucronella fasciculatis of Europe, with no resemblance to this plant. Also the only other foreign Mucronella named, Mucronella fascicularis (described as Pterula from Samoa, Cfr. Myc. Notes, p. 532) is, I think, the European (homonym) species. I am not sure of the spore record, but they are the only spores I note floating around.

TREMELLA FUCIFORMIS, FROM JOHN GOSSWEILER, WEST AFRICA (Fig. 1188).—This fine, white Tremella is the common white one in the tropics. It is a beautiful plant. It was named by Berkeley from its resemblance to a sea weed. The basidia are typically cruciately parted and very easily seen. There is no record of the species in our Southern United States, but at the British Museum I saw a specimen from Carolina misnamed Tremella lutescens, and I have a specimen from Dr. Burke, of Alabama. We have other specimens from Miss A. V. Duthie, South Africa, Dr. J. B. Cleland, Australia, C. A. O'Connor, Mauritius, S. Hutchings, India, and C. G. Lloyd, Samoa. Every time we mention the plant we do not fail to call attention to the fact that the picture Atkinson gave under this name was a misdetermination, and has no resemblance to it.

Fig. 1188.

POLYSTICTUS CLADOPHORUS, FROM E. D. MERRILL, PHILIPPINES (Fig. 1189).—Pileus thin, rigid, with appressed fibrillose surface, usually incurved in drying. Context thin, pale. Hymenium darker than the context; of shallow, elongated, irregular pores. Under the lens densely setulose with hyaline, slightly thickened setae. The species came originally from the Philippines and was named Hexagona cladophora by Berkeley. We present (Fig. 1189) photograph of this type. It is widely removed from the other Hexagonas and was omitted in our pamphlet where we suggested that it was a better Trametes.

Fig. 1189.

Bresadola has recently instituted a "new genus," Elmerina, for the species with similar setae, but it is an innovation in the classification of polypores, to base genera on "hairs," and one that does not appeal to me. The hymenium has a suggestion of a Daedalea.

POLYSTICTUS ANOMALOUS, FROM DR. J. B. CLELAND, AUSTRALIA (Fig. 1190).—Effused, reflexed. Surface with hirsute, brown hairs like Polystictus hirsutus. Hymenium and metuloids like the Philippine form of Polystictus cladophorus, of which this is the analogous species, or perhaps a better form. This seems to be the first time this curious species has been collected in Australia.

Fig. 1190.

IRPEX VERSATILIS.—This was figured and named on page 712, Mycological Notes, and was based on a specimen from P. F. Clarke, Australia. It is evidently only an indurated, irpicoid form of same plant.

IRPEX VELLEREUS, originally from Ceylon; we figured a specimen from South Africa on pages 582 and 598, Mycological Notes. It is a plant closely related to the preceding plants, but the hymenium is pale and concolorous. The metuloids are the same. In Polystictus cladophorus (and other species mentioned) the dark hymenium contrasting with the pale flesh is a feature of the species.

POLYSTICTUS IMBRICATUS, FROM EDWIN CHEEL, AUSTRALIA (Fig. 1191).—Pilei very numerous, densely imbricate, thin, pure white and discolor but little in drying. Margin thin, incurved. Surface uneven, but glabrous. Pores large, irregular, white, with thin walls. Spores and cystidia not found. We received this plant probably ten years ago from J. H. Maiden, Sydney, but at that time referred it to Polystictus membranaceus, but were not satisfied, and it has been among our unnamed specimens for some time. The receipt of a second collection (No. 67, from Lord Howe Island) from Edwin Cheel has influenced us to publish it. We do not know of another similar plant, glabrous, pure white, with large pores. We would make a new section for it (108. bis).

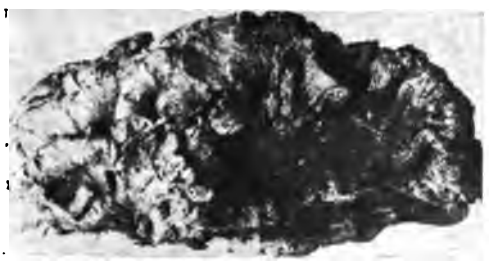


Fig. 1191.

LYSURUS GARDNERI, FROM P. VAN DER BIJL, SOUTH AFRICA (Fig. 1192).—We present a photograph by P. Van der Bijl of this species from South Africa, which was without doubt in our mind the original of Anthurus Woodii, notwithstanding it has no resemblance, however remote, to the figure that Kalchbrenner, the author, gave of the plant. Type specimens are at Kew and at Berlin, and are as we have previously stated Lysurus and not an Anthurus as Kalchbrenner shows. Kalchbrenner's figure well deserves a place in the "Myths of Mycology."

Fig. 1192.

In our phalloid pamphlet we gave Lysurus Woodii, the benefit of the doubt, as being a possible species because the types we saw were more slender than our idea of Lysurus Gardneri. But Mr. Van der Bijl's photograph removes the last vestige of a doubt on that score. It is exactly the same plant as we have in the United States, and as our photograph on page 513. For many years this species passed with us as "Anthurus borealis," but we believe it is straight at last.

POLYPORUS TSUNODAE, FROM PROFESSOR A. YASUDA, JAPAN (Fig. 1193).—As named by Prof. Yasuda from the collector, K. Tsunoda. *A new type of the section Ganodermus.* Pileus sessile 4-7 x 8-12 cm. Surface brown, with scurfy flocci. Context *white*, fleshy, drying hard and indurated but not "woody." Pores pale, darker than the context, fleshy. Spores large, ovate, 15 x 20-24, pale colored, distinctly rough, with a large gutta, thick walls, and projecting base.

Fig. 1193.

The spores are typically those of the section Ganodermus, although there has never been another plant known with such spores and white fleshy context. I never saw a Ganodermus before that I could not place in the section on sight, but no one would ever suspect this without a spore examination. Some time ago I protested to Bresadola because he recognized the section Ganodermus as a genus,

for I can not see how one section of Polyporus can be recognized as a genus without recognizing others. He replied that the plants were such a natural assembly with peculiar spores and colored context, that he felt the plants should have generic rank. I wonder what he would say to this, which is a Ganodermus *only in its spores* and a Polyporus in having white flesh and every other feature. Indeed, if Polyporus is to be split up, a "new genus" will have to be made for this, for which McGinty suggests Inopinatus Tsunodae; which future name jugglers can employ, if they are not honest enough to take the name Polyporus Tsunodae, with which Prof. Yasuda has christened it.

Fig. 1194.

PTERULA MANNII, FROM JOHN GOSSWEILER, PORTUGUESE WEST AFRICA (Fig. 1194).—I recognized this as soon as I saw it as something familiar, and found on looking up my photograph that it is a specimen named in mss. at Kew, as Lachnocladium Mannii. I have no record of where the Kew specimen came from. It is very peculiar in its manner of branching. I find no hairs on the plant, hence for me it is a Pterula instead of a Lachnocladium. But in the museums of Europe I could not see any distinctive idea in specimens included in both these covers. They need revision very badly. I do not believe anyone could have any trouble identifying this from our photograph (Fig. 1194). The peculiar way in which it branches at the top of the stem distinguished it. The slender stem is somewhat blackened at the base. The spores are hyaline, 4 x 6, smooth. The branches seem scurfy under the microscope, but no hairs.

A plant from India, at Kew, named Lachnocladium himalayense, is somewhat similar, but appears different and is recorded as having globose, hyaline spores.

TREMELLA FRONDOSA, FROM STEWART H. BURNHAM, NEW YORK (Fig. 1195).—There are two species (or forms) of Tremella very close to each other, which I have been trying to get straight for some time, viz.: Tremella frondosa and Tremella foliacea. There are both foliaceous in form, and as far as I have been able to learn the main difference is color. We can give no more simple idea of it than to refer to Bulliard's plate No. 499, where

figures X and Y represent the dark plant Tremella foliacea (in our view) and figure T the light plant, Tremella frondosa, such as Mr. Burnham sends. We have collected the dark plant (foliacea) in Sweden and we get it from correspondents quite frequently. The

Fig. 1195.
Tremella frondosa.

light plant (frondose) is rarer. Our photograph represents the latter, and was made from a specimen from Fontainbleau near Paris, although we doubt if the species could be told apart from photographs.

In this connection there is a similar plant of record in Europe called Tremella fimbriata, and supposed to be represented by Bulliard's figure 272. We never saw a plant corresponding to this figure, nor have we been able to get any definite information on it.

GEASTER CLELANDII, FROM J. BURTON CLELAND, N. S. WALES (Fig. 1196).—Exoperidium, rigid, incurved when dry, cut into (eight in this specimen) rather narrow lobes. Endoperidium scurfy, with a short, thick pedicel. Mouth, protruding, strongly furrowed.

Fig. 1196.

The single specimen of this plant presents a character to separate it from others of the section (Rigida, Cfr. Myc. Notes, page 317) to which it belongs. It has a pedicellate endoperidium. The color is decidedly reddish, but

it grew in red soil; which, no doubt, has something to do with the color.

Geasters are best defined in terms of others. This is Geaster Schmidelii as to size, pedicel and mouth, but exoperidium puts it in a different section. It is Geaster striatulus excepting the endoperidium which is pedicellate. As a matter of fact it is probably the original of Geaster striatulus, which was from Australia and not authentically known (Cfr. Myc. Notes, page 312) and which was described as endoperidium "subsessile." But it is entirely different from Geaster striatulus in sense of Hollós, which we have adopted and illustrated several times. (Cfr. Myc. Notes, page 71, Lyc. Aust., page 16.) We present a figure of the plant as received, also as expanded under the influence of moisture. Neither shows the pedicel which separates this species from Geaster striatulus.

IRPEX CINGULATUM, FROM J. BURTON CLELAND, N. S. WALES (Fig. 1197).—This was sent by Dr. Cleland as Irpex consors, which it really is, but Irpex consors is a white plant, and this is marked with dark zone. The appearance is so different that in my opinion this should have a name. It might well be called Irpex zonatus, and I presume the Australian record of Irpex zonatus was based on this form. But Irpex zonatus, a misnamed plant from Ceylon (Cfr. Myc. Notes, page 602, Fig. 852), has for me no suggestion of the Australian plant. I do not know Irpex zonatus from Australia, and my determination for J. T. Paul some years ago, I think, was a mistake.

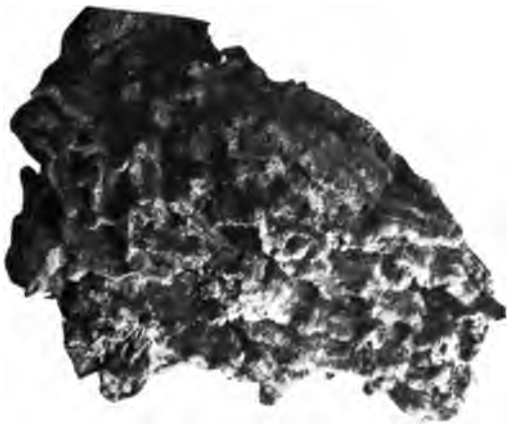


Fig. 1197.

LYCOPERDON PISIFORME, FROM PERE HYACINTHE VANDERYST, AFRICA (Fig. 1198).—We came near passing this as Lycogola Epidendrum, which it resembles exactly in size and appearance, but it did not look right, and when we noticed it was developed from mycelial threads we knew it was not a Myxomycete. Hennings named it from Africa as above, and three years later he named another, or I believe the same plant, from Java as "Lycoperdon pisiforme, new species," showing the care that Hennings employed in his work. Saccardo changed the

Fig. 1198.

latter to Lycoperdon Henningsii, which I think was inutile, for both collections appear to me to be the same species. While these Eastern forms are globose, and our American plant is ovoid and somewhat pointed when mature, they are all forms of the same species originally called Lycoperdon acuminatum by Fries from tropical America. Spores, cortex and capillitium are the same. Compare Myc. Notes, page 233, where an account and figures of our American plant are given, and also in footnote a reference to this Eastern plant. The name Lycoperdon acuminatum is not very appropriate to our American plant, and would have no application to the Eastern form, which is globose.

THE PSEUDO-SCLEROTIA OF LENTINUS FASCIATUS, FROM DR. J. BURTON CLELAND, N. S. WALES (Fig. 1199).—We gave an account, Myc. Notes, page 666, of, we believe, the only Lentinus known with a true sclerotium. Prof. Petch has published a couple of species of Ceylon, that produced what he calls pseudo-sclerotia. The Lentinus grows on rotting wood, and the mycelium permeates the tissue of the wood, and protects it from decay, so that when the wood rots and wastes away these irregular masses are left and continue to develop the fruiting bodies of the Lentinus. We can not say that this is the same process that takes place in the Australian species, for we know nothing of the habits of the species. Dr. Cleland sends us two "pseudo-sclerotia" and each appears to be a piece of fairly preserved wood, surrounded by the mycelial growth of the Lentinus, which binds the dirt and debris together around the wood, and forms a brown pad which would have been called in old times an "Ozonium" and probably described as a "new species."

Fig. 1199.

MYCOLOGICAL NOTES.

BY C. G. LLOYD.

No. 56.

CINCINNATI, O. OCTOBER, 1918.

DR. GEORGE A. REX

MYCOLOGICAL NOTES

Issued by C. G. LLOYD.

224 West Court Street, - - CINCINNATI, OHIO.

SUBSCRIPTION PRICE.—A little personal interest on the part of the recipient in picking up and sending to my address, specimens of the larger fungi. All are desired excepting specimens of fleshy Agarics. Simply dry the specimens and send them in.

DR. GEORGE A. REX

In the study and additions to our knowledge of our American Myxomycetes, no one man has done more than Dr. Rex, of Philadelphia. I remember that Professor Morgan always spoke most highly of the part that Dr. Rex took in the work, and in Lister's classical monograph no other American is given the prominence that is given Dr. Rex.

He was a busy man with a large practice and worked at his mycological studies at such time as he could spare from his professional dutics. It is such men as Dr. Rex, who pursue a study from the love of it alone, who accomplish the most. The following sketch of Dr. Rex' life and the portrait were furnished us through the kindness of Mr. Stewardson Brown.

An interest in the Myxomycetes began when Dr. George A. Rex turned to the microscope as a means of relaxation from his exacting medical practice. The moist ravines with their abundance of decaying vegetation, then existing in parts of Fairmount Park, offered a rich hunting ground, near at hand, for these fascinating forms, and many of extreme interest and novelty were here collected. Subsequent studies of these with others from elsewhere resulted in a number of papers, published in the Proceedings of the Academy of Natural Sciences of Philadelphia during 1890 to 1894.

Dr. Rex was a man of pleasing personality, modest, jovial, keenly interested in his hobby, and ever ready to cooperate with others of similar bent. His death in February, 1895, at the age of fifty years, removed in his prime one of our most promising students in the field of mycology. His collections, comprising some hundreds of specimens, now form part of the herbarium of the Academy of Natural Sciences of Philadelphia.

REV. J. RICK

This number of Mycological Notes might be called a "Rick Number," for it is largely devoted to interesting specimens received during the past summer from Rev. Rick, Brazil. For the past few years Father Rick has been in very poor health, and we are gratified to know he is so far recovered as to be able to engage in his favorite study.

THE GENUS ENDOGONE

We have received from Dr. Cleland, Australia, specimens of the mysterious, hypogeal genus Endogone, and it is surely a "new species" and could be made into a "new genus." This genus is mysterious from the fact that its spores are not known. One author does claim to have found spores in a species from Brazil, but we do not cite him as we feel it is too uncertain. The gleba of Endogone is found, under the microscope, to be composed of large vesicles usually over a hundred microns in diameter, and borne on thick threads. Our figure (1238), taken from Bucholz, well illustrates a vesicle. What they are is the question. They have thick, hyaline walls and are filled with granular, colored contents, and they are probably the spores of the plant. But as far as I know this has not been demonstrated, and they do not look like other spores. They are about the size and appearance of the asci of some tuberaceous fungi, but if they are asci it is curious that spores are not found in them.

Fig. 1238.

ENDOGONE TUBERCULOSA, FROM DR. J. B. CLELAND, NEW SOUTH WALES (Fig. 1239).—1–2 cm. thick, globose, pale

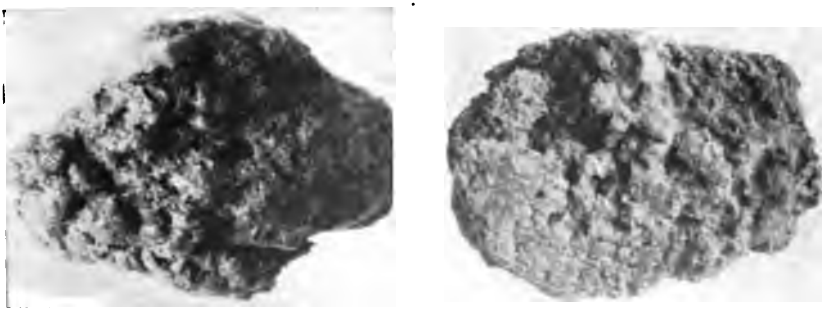


Fig. 1239.
Endogone tuberculosa (enlarged)

orange. Surface tuberculate. Peridium indistinct. Gleba convolute, lacunose, yellow. Vesicle imbedded in the context tissue, globose, 50–60 mic. with thick, hyaline walls and granular, yellow contents.

With the characteristic vesicles of the genus Endogone, we believe this is best so referred, though on the lacunose gleba it could be made into a "new genus." The tubercular exterior is also a feature not recorded as to any other species. Dr. Cleland finds it "subhypogeal, just above the ground." The specimens are covered with mud and appear to have grown in the ground. But one Endogone is recorded from Australasia (Tasmania), viz.: Endogone australis, which is scantily described, but is white and certainly is not this. Our figures are enlarged about sixfold.

ENDOGONE PULVINATA, FROM DR. JEKYLL, JAMAICA (Fig. 1240).—About a cm. in diameter. Peridium thin, but distinct, reddish brown, even, smooth (wrinkled no doubt in drying). Gleba continuous, pale reddish brown. Vesicles oval, 60–100 mic. with thick walls and granular, brownish contents.

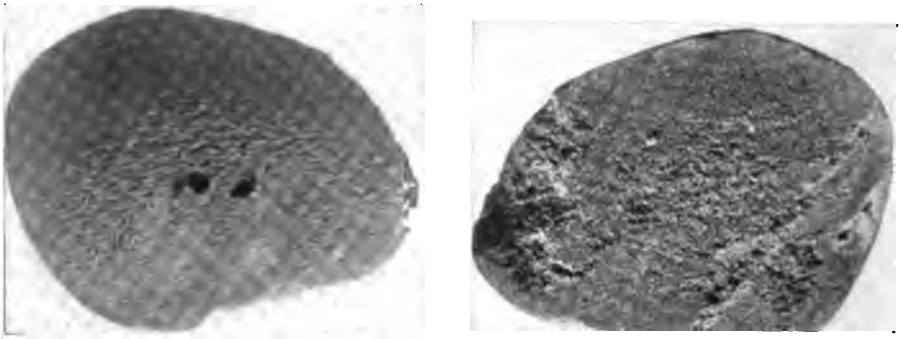


Fig. 1240.
Endogone pulvinata (enlarged)

We have had these specimens for many years unnamed in our museum. We refer them to a species described from Venezuela, and they appear to answer the description. Our figures are enlarged about sixfold.

RARE OR INTERESTING FUNGI RECEIVED FROM CORRESPONDENTS

RICKELLA TRANSIENS, FROM REV. J. RICK, BRAZIL (Fig. 1241).—This curious genus of Discomycetes was published by Rev. Rick in 1904. It was well described, but rather poorly illustrated, and we are glad to be able to give photographs to show the curious structure of the plant. We present photographs of the upper and under sides (dried) and a section soaked. The

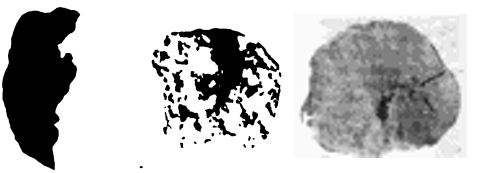


Fig. 1241.

spores which are oval, 6–8 x 12 mic., hyaline, smooth, are in asci on a thin, convex disc and the fruiting layer is similar to most Pezizas. The unusual feature is the white, poroid, convolute flesh that bears this disc, and which has no analogy to any other genus. Rev. Rick compares it to Cyttaria which has the asci lining tubes of the gelatinous flesh, an essentially different idea. To our mind Rickella, while peculiar in itself, is most closely related to the Pezizae genera with convex (not cup shaped) hymenium, such as Rhizina.

GEASTER STIPITATUS, FROM REV. J. RICK, BRAZIL (Fig. 1242).—Twenty-five years ago Prof. Fischer published this from Java with a good illustration (Hedwigia, 1893). Many hundred Geasters have since come to me from all parts of the world, but this is the first time this has ever come to hand. Geaster stipitatus belongs to the section of epigean species which are developed on the surface and from a conspicuous, mycelial base. Its relations are quite close to the little tropical Geaster mirabilis and closer to Geaster subiculosus (Plate 100, Fig. 4), which is the connecting form. It is characterized by the shape as shown in our figure, particularly the unexpanded plant that reminds me much of Lycoperdon piriforme. It is the same idea as Geaster subiculosum, only "more so."

Fig. 1242.

HYDNUM VILLIPES, FROM REV. J. RICK, BRAZIL (Fig. 1243).—Pileus pleuropodial, small, thin, fleshy, brown when dry. Surface minutely pubescent, villose toward the base. Stipe lateral, densely villose. Teeth concolorous with the pileus. Cystidia none. Spores globose, hyaline, smooth.

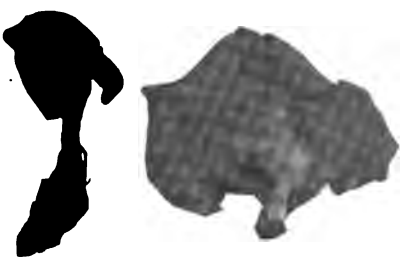


Fig. 1243.

We do not know the color of the fresh plant, and suspect it has changed in drying. It grows on logs. I know no other species with a villose stem. Rev. Rick has listed this species as Hydnum basiasperatum, which was one of Henning's many bulls. Uhl sent Hennings a specimen of Hydnum rawakense that had during its short but eventful life met with an accident. Something had turned over the host on which it was grow-

ing and it had started a new growth of spines near the base of what had been its upper surface. This accident was the basis of Hydnum basiasperatum, and the species properly belongs to that rapidly increasing division known as the "Myths of Mycology."

Hydnum villipes goes in section Pleuropus of Fries or in the "genus" Steccherianum, Creolophus, Pleurodon or Auriscalpium, all of which are the jugglers' products of the same section.

POLYPORUS (AMAURODERMUS) INOPINUS, FROM REV. J. RICK, BRAZIL (Fig. 1244).—The section Amaurodermus presents more surprises than all the other sections of Polyporus together. The species are very distinct and can not be confused with each other, but they are rare and most species are known from single collections. When we first saw this plant we knew it was something new to us, but we thought it was a Petaloides. Amaurodermus was not suggested to us until we looked at the spores.

Fig. 1244.

Plants produced from a thick, erect root stalk, which is of a different nature from the creeping rhizomes of other species when known. Pileus orbicular spathulate, borne on a short, lateral stem. Surface glabrous, even, chestnut brown, faintly zonate, not laccate. Stem surface similar, but darker. Context thin, pale colored, concolorous with the pore tissue. Pores minute, round, with white mouths, bruising brown. Spores globose, apiculate, 12 mic. pale colored, *strongly* rough.

We would enter this in Section 6a of our pamphlet, although it does not suggest to the eye any other species of the section.

RIMBACHIA CYPHELLOIDES, FROM REV. J. RICK, BRAZIL (Fig. 1245).—Plant white, gelatinous, pezizaeform, 10–15 mm. in diameter, borne on a short, white, smooth stipe. Hymenium reticulate, veined, covering the superior face of the cup. Cystidia none. Spores subglobose, 6 x 8, hyaline, smooth. We received this plant from Rev. Rick, labeled Laschia cyphelloides. In former times it would have been placed in the genus Laschia. In the

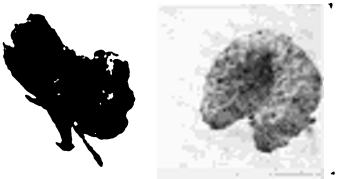


Fig. 1245.

Laschia covers in the the museums of Europe two entirely different types of plants are included. The most of these are poroid and gelatinous. These we would continue to call Laschia although it was not the original idea. But there are a few plants in the Laschia covers with the hymenium in veins or folds (not poroid). These are probably best called Campanella, as proposed by Hennings. They have the hymenium like that of most Basidiocetes, inferior. The genus Rimbachia corresponds to Campanella, excepting that the hymenium is superior. Our figures show the plant natural size, and (1246) an enlargement of the hymenium.

Fig. 1246.

RIMBACHIA VITELLINA, FROM REV. J. RICK, BRAZIL (Fig. 1247).—Entire plant yellow, smooth. Stipe mesopodial, slender, yellow, 1–2½ cm. long. Pileus plain, about 1 cm. broad, the hymenium on the upper surface. Hymenium of obtuse folds, drying more strongly wrinkled. Cystidia none. Spores small, 1½ x 3 mic., hyaline, smooth. The genus Rimbachia which has a superior hymenium is known only from the American tropics. Heretofore we have seen but one species which was called Merulius pezizoideus and afterwards Rimbachia paradoxa. This was distributed by Father Rick (No. 299) under the former name. In Father Rick's recent collections there are two species of Rimbachia, and the genus is probably well represented in the American tropics.

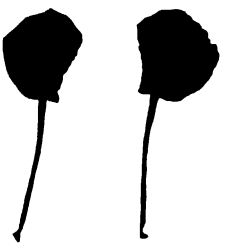


Fig. 1247.

DACRYOMITRA DEPALLENS, FROM REV. J. RICK, BRAZIL (Figs. 1248 and 1249).—It is strange to me that Moeller in his exhaustive work on Brazilian, tremellaceous plants did not include any with furcate basidia. Certainly he must have had them, for such genera as Dacryomyces, Guepinia and Calocera grow everywhere. Had Moeller considered this section with furcate basidia, we should no doubt have had a name for this plant, for Moeller made exhaustive collections in Brazil.

Fig. 1248.

Dries bright orange, with cerebrine, convolute heads borne on short, orange stipes. Basidia furcate. Spores hyaline, 6 x 20, guttulate and soon septate with 3–4 septa.

The plant when received was of the same color and texture as our Dacryomyces aurantia and it has the same spores and basidia. It had a different aspect to me, however, and when I soaked it, it soon faded out to pale yellow, about the color of Tremella lutescens. Dacryomyces aurantia does not do this.

This Brazilian plant is usually developed capitate from a short stipe. (This stipe can be noted in our enlargement, Fig. 1248.) Hence, technically is a Dacryomitra (not Dacryomyces, which it would

Fig. 1249.

Fig. 1250.

Dacryomitra depallens.

otherwise be). But the stipe is appressed to the host, and the cerebrine head soon covers it so it is not seen in our figure made from the soaked plant (Fig. 1250), and only faintly indicated in the figure (1249) from the dried specimen.

GEASTER TRICHIFER, FROM REV. J. RICK, BRAZIL (Fig. 1251).—This marked species was named by Rev. Rick, and he is the only one who has found it. We considered and illustrated the plant on page 314. We present a figure herewith (1251) that shows its habits of growth, on a thick, white, mycelial subiculum. This is the same as Geaster mirabilis, and Rev. Rick is disposed to consider it as a form of Geaster mirabilis. It appears to me very distinct, first in its brown exoperidium (while that of mirabilis is white), and second in the strigose, hairy exoperidium, which no other species has. The habits and size are similar, but they appeal to me as being entirely different species.

Fig. 1251.

POLYPORUS HUMILIS, FROM REV. J. RICK, BRAZIL (Fig. 1252).—When I was at Kew, Father Rick sent me a collection that I compared and found the same as Polyporus fractipes, named by Berkeley from Southern United States. I have since learned it was named Polyporus humilis by Peck, which we think is a better name and should replace fractipes which was based on an accident. Why continue to call a plant fractipes because the type happened to have the stipe broken? Although endorsed by our "learned law makers," such "rules" impress me as being "scientific nonsense." I have always supposed that it was a white plant, but Berkeley described it as ochraceous and Father Rick sends a note "on logs, yellow." Very little yellow remains in the dried specimens. Peck described it as white, but on comparison I am sure his plant is the same as Father Rick's. A marked feature of the plant as noted by Peck, but not mentioned by us (Stip. Pol., p. 131), is a thin, soft, spongy, external coat which contrasts with the hard context.

Fig. 1252.

LENZITES BECKLERI, FROM EDWIN CHEEL, AUSTRALIA (Fig. 1253).—This is evidently rare in Australia, but we have a specimen recently from Dr. Cleland. It is a white species with thick distant ochraceous gills. We present a photograph from the type at Kew. We believe that the same plant grows (very rarely) in southern Europe, but we do not have it in this country. The only specimen we ever saw was in Boudier's herbarium labeled "Lenzites albida." We can not think it is the same as illustrated by Fries from Sweden under the name

Fig. 1253.

Lenzites albida, and surely not in the interpretation recently placed on it by Bresadola, who seems to take it in the sense of Quélet. In this sense it is a thin, white plant very rare in Sweden, a better Daedalea than Lenzites, and certainly not the Australian plant.

ISARIA COSMOPSALTRIAE, FROM PROFESSOR A. YASUDA, JAPAN (Fig. 1254).—As named by Yasuda, who sends the following notes, "On the larva of Cosmopsaltria opalifera. Stem pale. Conidial mass almost white. Conidia elliptical, smooth, hyaline, sometimes slightly curved, 5-8 x 2.5-3 mic. Cosmopsaltina opalifera is our common small cicada which is found in late summer."

I have never worked over the named Isarias, but several names have been proposed for Isarias on cicada, and it is probable that all are the same. "Cordyceps" Sinclairii, named by Berkeley from New Zealand, was on a cicada. Isaria Harioti recently figured from Madagascar; Isaria arbuscula from Mexico; and Isaria amorpha from Java are all on cicada, and are probably all the same species. This is probably the conidial form of Cordyceps sobolifera, but the connection is not established.

Fig. 1254.

SARCOSPHAERIA CORONARIA, FROM STEWART H. BURNHAM, NEW YORK (Fig. 1255).—This is a rare plant, and the first specimen we have seen from this country. It is more common in Europe, and our photograph (of a section) was made from a fresh specimen that was brought in where I was working in the Museum at Paris. It is peculiar in its habits. Mr.

Fig. 1255.
Sarcosphaeria coronaria.

Burnham finds it in clayey soil under hemlocks. At first it is buried and a closed ball. It emerges about half out of the ground, opens, and splits into starlike lobes. The color is pale violaceous. Spores

are 6 x 14, smooth (my measurements, they are recorded as large as 9 x 18).

In Europe this is said to be quite frequent, and I note where the French use it for food. It attains a large size, 3 inches according to good authority, 5 inches according to Cooke. I am not familiar with the history of American Pezizas, but my impression is that Mr. Burnham is the only one who has found it with us.

STEREUM PLICATUM, FROM EDWIN CHEEL, AUSTRALIA.—Pileus mesopodial, irregular—3-4 inches in diameter. Upper surface irregular with pale, matted, tomentose hairs. Hymenial surface with broad, obtuse even or slightly striate folds; stipe short, thick. Surface as that of pileus. Cystidia none. Spores elliptical, 6 x 12, hyaline smooth. We consider this as an anomaly of Stereum caperatum, but the cystidia are absent and spores are larger. From Stereum spongiaepes, figure 1256, it also differs in not having the characteristic, spongy stem. The hymenial folds and the surface tomentum (Cfr. Fig. 526, Cladoderris pamphlet) are the same as those of Cladoderris spongiosa, but it has not the papillae, nor cystidia, nor spores of this species. The genus Cladoderris and Section One of Stipitate Stereum embrace species that merge together, and this may be an anomaly of some other species. Probably it is Stereum caperatum, as Mr. Cheel suggests, but it differs in thickness, surface and absence of cystidia; also the upper pileus surface does not have the ridges found on Stereum caperatum. Cooke in Saccardo (Vol. 6) states that Stereum caperatum has globose, rough spores. We think that an error, for while some spores we note are subglobose, but smooth, most are elliptical and we think the mature spores measure about 6 x 12. We gave in our pamphlet the spores of Stereum spongiaepes as globose. That also is probably an error, although based on spores that we saw. We merely label this specimen as above in our museum, but do not consider it other than an anomaly. We present (Fig. 1256) a photograph of Stereum spongiaepes, which is better than the figure we gave in our Stipitate Stereum pamphlet. These similar species run together and probably there is but one real species involved.

Fig. 1256.

POLYPORUS (AMAUR.) SALEBROSUS, FROM T. HUNTER, WEST AFRICA (Fig. 1257).—This is the fourth collection known. First it came to us and was named, from Hyac Van-

deryst, Congo Belge, then a fine collection from W. Small, and now another fine collection from Mr. Hunter, West Africa. Miss Wakefield advises me that a collection has also reached Kew from Africa.

Fig. 1257.
Polyporus salebrosus.

It is a very strongly marked plant. We gave a photograph on p. 694. These specimens received from Mr. Hunter differ a little from those received from Mr. Small. The top of the pileus is much more strongly striate and of brighter color. Our photograph of the top of a specimen will show this difference. Mr. Hunter's plant is the one on the left. The one on the right is from Mr. Small. But they are surely the same species. Mr. Hunter's plant also has a thinner pore layer, not over a mm. thick. They are 2–3 mm. in Mr. Small's collection.

AURICULARIA HUNTERII, FROM T. HUNTER, WEST AFRICA (Fig. 1258).—We published in Myc. Notes, p. 784, a figure of a plant we called Auricularia Moelleri, as a strongly reticulate form of Auricularia auricula-Judae. We present herewith a figure which for us is the corresponding form of Auricularia delicata, and a photograph of the usual form to show the contrast. It is not worth while to describe it, for no description can equal the photograph. While these extreme forms are so different,

Fig. 1258.

they would in old times have been "new species," but the interest of truth is better served in presenting them as they really are. Moeller considered Auricularia auricula-Judae and Auricularia delicata to be the same species, a conclusion from which Bresadola, Petch and myself all demur. In our figure the plant on the left is Auricularia Hunterii and the one on the right Auricularia delicata.

MERULIUS CASTANEUS, FROM A. YASUDA, JAPAN (Fig. 1259).—Additional collection of species named on page 555. We present a figure of a specimen which grew in a vertical position with elongated pores, also one dried and one soaked that grew horizontal. The plant is not a very good Merulius, perhaps a better Poria. A section of a soaked plant shows subhyaline tissue, not deeply colored as we stated. Basidia hyaline, clavate. The plant has hyaline, thin walled cystidia. Spores we do not find, and doubt our record.

Fig. 1259.

CORDYCEPS OPHIOGLOSSOIDES ON A LOCUST, FROM JINTARO UMEMURA, JAPAN (Fig. 1260).—Nature is always setting traps for the systematist. It has long been a part of mycological belief that two species of Cordyceps (capitata and ophioglossoides) only grow on other fungi (Elaphomyces). We hesitate to state otherwise, for it is almost heresy. But Mr. Umemura sends us photographs (Fig. 1260) and a Cordyceps and the host (but not attached), and the specimen is surely Cordyceps ophioglossoides, and the host is a locust, or the remains of some similar insect. There can be no question as to the identity of the Cordyceps. It is exactly the same in every respect on comparison, and as will be noted from Mr. Umemura's photograph, is attached in the same way. It differs in several respects from Cordyceps sobolifera, the only species of Japan heretofore found on locust. Therefore, unless some mistake has been made in the collection, and the photographs seem to preclude that possibility, we are able to record from Japan, Cordyceps ophioglossoides growing on a locust instead of the usual host (Elaphomyces).

Fig. 1260.

PODOCREA CORNU-DAMAE, FROM A. YASUDA, JAPAN (Fig. 1261).—I presume this is the young of this species as figured, though it is said to branch above in well developed specimens. The genus Podocrea is simply an erect Hypocrea with fleshy stroma, and globose or cubical spores, sixteen in the ascus. We have but one species with us in the United States, Podocrea alutacea, which differs from the Eastern plant in shape. (Cfr. Myc. Notes, p. 87.) It was named Podocrea Lloydii, but turned out to be very much of a joke on me, or the author, I should not like to say which.

Fig. 1261.

Professor Yasuda reports this as very rare. He found but one specimen. Of course, we do not know it is the young of Podocrea Cornu-Damae, but we presume it is.

POLYPORUS PROFISSILIS, FROM A. YASUDA, JAPAN (Fig. 1262).—Pileus sessile, dimidiate. Color white when fresh, changing reddish in drying, particularly the pores. Surface dull, rugulose. Flesh white, drying horny. Pores large, sinuate, becoming reddish and somewhat agglutinate in drying. Cystidia none. Spores 6 x 8, hyaline, with a large gutta.

Fig. 1262.

This is the Japanese analogue of our Polyporus fissilis, though when I first saw it, fissilis was not suggested to me. Its characters are all those of fissilis in a slight degree. This specimen was only slightly reddened. Polyporus fissilis turns deep reddish, especially the pores in drying. Polyporus fissilis is a rare plant with us, and this appears to be rare in Japan.

POLYPORUS ANTILOPUS, FROM DR. CLELAND, NEW SOUTH WALES (Fig. 1263).—Pileus petaloid to a short, stipitate base, "pure white" when growing, drying reddish brown. Surface glabrous with obscure, fine lines. Context thin, brittle, drying paler than the pores. Pores minute, slightly elongated. Spores (if correctly seen) cylindrical, hyaline 6 x 12.

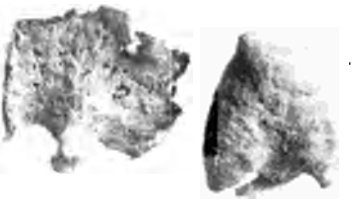


Fig. 1263.

Without Dr. Cleland's collection notes no one would suspect that this had been a pure white

species, for dried specimens are always a deep reddish brown. We considered the plant (p. 142) in our Stipitate Polyporoids, but were then only familiar with the Philippine and Samoan specimens. We believe this is the first collection from Australia. Kalchbrenner named this from South Africa as a variety of Polyporus vibecinus, but if we interpret vibecinus correctly (Cfr. Myc. Notes, p. 698) it has no relation to it. Polyporus palensis in the type idea seems to be a large pored form of it, but a better Favolus and same as Favolus spathulatus.

LENZITES GLABRA, FROM EDWIN CHEEL, AUSTRALIA (Fig. 1264).—This can be described in a few words as being the common Lenzites betulina with a perfectly glabrous, grey surface, with raised zones. But one specimen was sent by Mr. Cheel which came from Russell Islands, of the Solomon Group. Our photograph of the pileus surface tel!s the whole story. Otherwise in white context and gills, thickness and every feature it is the same as the common and widespread Lenzites betulina, which is always strongly hairy or tomentose as Fries indicates. A single specimen might be only a "hairless" sport, but it does not impress us that way. It seems very different.

Fig. 1264.

LENZITES UNGULAFORMIS, FROM DR. J. BURTON CLELAND, N. S. WALES (Fig. 1265).—Just about seventy years ago Berkeley so named a specimen from Southern United States. It is not a species. No one ever found it since with us, but I judge this Australian specimen from Dr. Cleland is the same. The context is white, the gills typically those of the common Lenzites betulina, but the upper surface is different. It is white, not pubescent, nor zoned, but glabrous and rugulose. The same surface exactly that occurs on Polyporus Spraguei. While I look on it as some aberration of Lenzites betulina, we can not explain it on any other theory than a "species." But these sporadic "species" are of not much importance. We present a photo-

Fig. 1265.

graph of the upper surface of the type at Kew. The shape of the particular specimen from which it was named, of course, is not a character even, and it is foolish to name a species from such a feature.

POLYPORUS (AMAUR.) CONJUNCTUS, FROM T. HUNTER, WEST AFRICA (Fig. 1266).—Nature seems to take delight in overthrowing ideas that men formulate in classification. We have here a plant that suggests nothing but the section Amaurodermus. Indeed it seems to the eye almost the same on comparison as Polyporus fasciculatus, which is a typical Amaurodermus. The size, shape, color, pores, context and pore colors, and stipe are the same. The pileus surface is paler and not so strongly zoned, and if

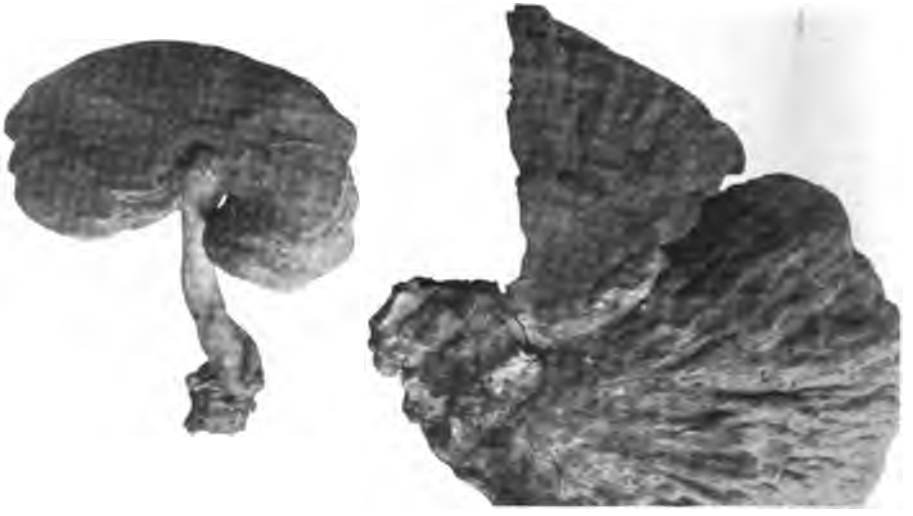


Fig. 1266.
Polyporus conjunctus.

the spores were the same we would refer it to this species. But the spores are entirely different. The spores of Polyporus conjunctus do not belong to the section Amaurodermus. They are hyaline, 8 x 10 mic., smooth. Technically it belongs to the section Lignosus, by the side of Polyporus camerarius of South America. In fact, the photograph of camerarius would pass for this plant, but camerarius has pale, uncolored pores and this plant deep colored pores. We consider it an Amaurodermus on its coloration, general appearance and large spores and a Lignosus only on the color of the spores.

Pileus unicolored, pale fauve, with raised zones. Surface dull. Context cinnamon. Stem with dull surface, light brown in color. Pores minute, 3–4 mic. deep, darker color than the context. Spores elliptical, 8–10, hyaline, smooth. Mr. Hunter states it had a yellow margin when fresh.

MYCOLOGICAL NOTES.

BY C. G. LLOYD.

No. 57.

CINCINNATI, O. APRIL, 1919.

This number should be bound following No. 58 in order to preserve the sequence of pages and figures.

J. RAMSBOTTOM

MYCOLOGICAL NOTES

Issued by C. G. LLOYD.

224 West Court Street, - - CINCINNATI, OHIO.

SUBSCRIPTION PRICE.—A little personal interest on the part of the recipient in picking up and sending to my address, specimens of the larger fungi. All are desired excepting specimens of fleshy Agarics. Simply dry the specimens and send them in.

J. RAMSBOTTOM

Those who have worked with fungal remains in the British Museum, previous to the war, will welcome the smiling countenance on the preceding page. Mr. Ramsbottom was in charge of this department, and made it pleasant for the students who (rarely) ventured in.

Mr. Ramsbottom is a college man, who studied at Cambridge and was afterward awarded the Research Scholarship in Victoria University at Manchester. He writes B. A. after his name. I might find what that means by referring to a dictionary. Every Englishman in educational prominence must have a title after his name, otherwise he is of little more importance than an "ordinary" member of the British Mycological Society. Like all students in Universities, his work has been more directly applied to anatomy, physiology and pathology of plants than to taxonomy. Fully informed on the most recondite phases of the subject, he comprehends to the extreme such problems as cytology. protoplasm, oogonium, chitridiaceous fungi, and many other things of exactness that perhaps you, and surely I, did not even know existed.

Notwithstanding the disadvantages of college restrictions, Mr. Ramsbottom is a keen lover of nature and an ardent student of the fungi. He is a charming man, personally, and I am indebted to him for many pleasant interviews and home-like chats while visiting the Museum

During the late war, Mr. Ramsbottom offered his services as a soldier (so I am told by a mutual friend in London), but the Government wisely considered him too valuable in his chosen field. He was therefore commissioned as a Lieutenant, and assigned as Protozoologist to the British Forces at Saloniki. If we could know the truth, I suspect the lives of many British soldiers were thus saved, through his skill and knowledge of the obscure causes of tropical diseases.

Mr. Ramsbottom has been so wrapped in investigating the hidden phases of fungus reproduction that he has not paid much attention to his own species. He is a young bachelor (thirty-four), and there is still a chance, if he meets the right ♀

THE GENUS LASCHIA

Laschias are little, gelatinous fungi with pores, that grow only in tropical countries. They are usually small, some of them minute, and are but scantily represented in the museums. About ninety so-called species have been named in the usual way, each representing a collection that the author did not know much about, and about which he told little of value. They vary much as to structure and the really essential features are not mentioned in the descriptions. I have looked up most of the authentic specimens and made notes and photographs, but I did not take the liberty of cutting them as most are named from such scanty material that to cut would destroy them. Our views as to names and synonyms are therefore subject to correction when their real characters are known.

The generic name Laschia has had a varied and confused history. Fries applied it to a genus that was an Auricularia at that time. Both Montagne and Berkeley conceived it was the same as Favolus of Fries, and early species of both were named as Favolus and some are still preserved under the name Favolus in the museums. Afterwards however, both Berkeley and Montagne took the word Laschia in its present sense, and the numerous plants named by them established for many years the meaning of the name. They included a small section, recently separated, Campanella, that does not have pores, but gills. (Cfr. Myc. Notes p. 815). Junghuhn unaware that Fries had used the name Laschia, applied it to a plant better called Poria, and Montagne changed it to Hymenogramme (as found in Saccardo) apparently without knowing the plant at all. Patouillard, on the ground that Laschia was not historically correct, applied it to a small section that he separates, and calls the main section by another name. Why it should be applied to the small section rather than the large one, when historically it can not be applied to either, can only be explained by the number of "new combinations" made by this process.

Fig. 1388

Fig. 1389

Structure. Laschias are very interesting under the microscope and it appears to me have never been correctly observed. They have two conspicuous and different bodies.

First, most species have conspicuous color cells, or glands as I call them, usually imbedded in the sub-cuticular tissue, but also sometimes projecting from the surface and edges of the pores. In but few species that I have examined are these glands imbedded in the hymenial layer. The glands are always smooth with more

or less deeply colored contents, and of three types. First, ordinary, cuticular, irregular cells, filled with coloring matter. Second, gland-like bodies with a short or long stalk (Fig. 1388) mostly imbedded in the sub-cuticular tissue or edges of the pores, and in only a few species examined by me in the hymenium. Third, long, cylindrical color cells imbedded in the tissue.

Second, cristated cells which are always hyaline and crowned or covered with little processes, and are beautiful objects under the microscope. They have been held to be empty color cells but I think this is an error as the color cells are never cristated. They are of two types. First, oval cells (Fig. 1389 from Patouillard) crowned with spiny processes, and second, long, cylindrical cells (Fig. 1388 by Miss Wakefield) covered with spiny processes. Some species which are for me true Laschias have neither of these bodies.

The context, tissue and spores of those species we have examined (with one exception as to tissue) are hyaline.

For convenience, we sort the species that appear to us to be valid into four groups, based on general size and attachment. The first group which is mesopodial was considered in Myc. Notes page 645. Our enlarged figures are sixfold.

Not inappreciative of what has been done in this line, I should consider it a special favor if my correspondents in the tropics would especially hunt and collect these little plants. Send as amply as you can so I may have material to examine and still have some left. Also if the color of fresh plant is noted it will be a great help. Laschias should be simply dried, not sent in formalin, which changes and discolors them.

Group 2.—"Large" ½—1½ cm. with stipe ½ to 1 cm. or more.

LASCHIA PAPULATA (Fig. 1390 natural size). Pileus ½ to 1 cm. Color probably yellow when fresh, dried specimen pale reddish brown, and they soak out to be paler fawn. Surface strongly tessellate. Stipe slender, about 2 cm. long. Microscopic characters not known.

Fig. 1390

This was the first foreign species named of the present genus Laschia. It came to Montagne from Bertero, Island of Juan Fernandez. Bertero visited the island of Juan Fernandez, the home of "Robinson Crusoe" (about 1830). He distributed a small collection of fungi, named in mss. and the specimens are found at Paris and in Hooker's herbarium. They are probably also in Delessert's herbarium at Geneva. Montagne published the fungi of this collection in 1835 and I believe these were the first foreign fungi that he published. This plant was named by Bertero in mss. as Boletus papulatus. In his herbarium Montagne has endorsed it in mss. as Favolus cycloporus. In his publication he first referred it to Favolus

pusillus, which had been previously figured by Fries. Afterward, probably on advice from Fries, he put it in the genus Laschia, and in Flora Chile gave a good figure of it under the name Laschia papulata.

Additional specimens did not reach Montagne or Berkeley, but in recent years Hennings got them from Brazil, and of course, discovered it to be a "new species". We have never received the "type" form, from Brazil.

SYNONYMS: Favolus pusillus (Montagne not Fries) was the name under which it was first published. Laschia Selloana, Brazil, Hennings, is surely the same species. Laschia brasiliensis, Brazil, Hennings, was based on the same species but slightly smaller specimens. They were described as "pale yellow". The dried types are at Berlin.

Laschias Volkensii, Africa, Hennings. Types in alcohol at Berlin. Same general size and characters, and I believe it to be the same plant, notwithstanding the "yellow spores" of the description which were probably based on globose, color glands discolored by alcohol.

Laschia Zenkeri, Africa, Hennings. Surely the same as the preceding, and I think the same as the American Laschia papulata. Dried specimens are at Berlin.

LASCHIA SPRUCEI (Fig. 1391 natural size). Pileus white, soft, even, smooth, about 1½ to 2 cm. Stipe lateral, 1-1½ cm. long. Pores large, shallow. Microscopic structure not known to me.

Fig. 1391

This is the largest white species known and was the first named by Berkeley. He called it Favolus Sprucei, and gave a good figure in Hooker's Journal (1856). His specimens came from Spruce from Brazil. At that time it was a Favolus in Berkeley's idea, though he since changed his idea of Favolus but did not change his label. Hence it is still found in Favolus in Saccardo and in the covers at Kew. Cooke in his article on "Favolus and Laschia" does not note it.

SYNONYMS.—Laschia decurrens. Berkeley labeled an old specimen of Favolus Sprucei from Venezuela, Favolus decurrens. It must have been long ago for it is many years since Berkeley called a Laschia a Favolus. Berkeley probably concluded it was the same as his Favolus Sprucei for he never published it. However, Cooke dug it up and published it, for Cooke never looked further than Berkeley's labels. Laschia Moelleri. A collection of Laschia Sprucei, made by Moeller in Brazil and now in the museum at Berlin, was named as above by Bresadola.

LASCHIA FRIESIANA. Pileus ½-1 cm. Color yellow when fresh, dried specimens pale reddish brown, soaking out paler, isabelline. Surface strongly tessellate. Stipes varying from very short to 4-5 mm. long. Crested cells obvate, globose, hyaline, rather few. Colored glands, very numerous, imbedded in the sub-cuticular context and hymenial tissue of the pores. Varying from globose to ungulate. Spores 6 x 10-14, hyaline, smooth, guttulate.

This appears to be a frequent species in the tropics. I have specimens from Rev. Torrend, Brazil, and A. V. Duthie, South

Africa and Rev. Torrend, Madagascar. The microscopic features are similar to Laschia pezizoidea, but it is a larger and apparently a more deeply colored plant.

SYNONYMS.—Laschia rosea, Africa, Hennings, type in alcohol at Berlin, is surely the same. The "rose" color is the result of the alcoholic solution.

Laschia citrinella, Africa, given page 816 as a synonym for Campanella pustulata. Other specimens at Berlin appear to be this species.

Intermediate form.—I have from Rev. Torrend, Brazil, a collection sent with Laschia Friesiana as the same species. They looked so different that I was at first disposed to so consider them. Pileus 4-5 mm. with slender, lateral stem, 7-8 mm. Color dark reddish brown and surface faintly tessellated. On soaking it and sectioning it I find it has the same color and microscopic features as Laschia Friesiana, and I take it to be only a dark form.

LASCHIA THWAITESII (Fig. 1392 natural size). Pileus 5-9 mm. in diameter, bright orange red, strongly tessellated. Stipe concolorous, 1-1½ cm. lateral. Cuticular cells with colored contents. No glands or cristated cells. Originally from Ceylon and we believe it occurs in India, Africa and probably throughout the East. The following we think are synonyms:

Fig. 1392

Laschia Congolensis, Africa, DeSeyne. Described or at least compiled in Saccardo as Favolus. I have not looked up the publication but a specimen I saw at Paris, named (as it is) as Laschia, I took for the original.

Laschia lateritia. Africa, Hennings (Fig. 1392). Type in alcohol at Berlin. Spores said to be "yellow", 4-5 x 7-8, but probably an error.

Laschia sanguinea, Africa, Hennings. Based on a drawing only as far as I could find.

Laschia coccinea, adventitious in a warm house in England. Figured by Smith as of the most brilliant scarlet color. Compiled in Saccardo by a "lapsus calamitosus" as Laschia gelatinosa.

Group 3.—"Large" ½-1 cm. Sessile or with very short stipe.

LASCHIA PUSTULOSA (Fig. 1393 natural size). Pileus 1-2 cm., sessile, gelatinous. Surface tessellate. Color when fresh pure white, discolored in drying and soaking up with a pale rose tint. Context very thin of hyaline hyphae. Spores or basidia not found in my old specimens. Cristated cells none. Glands none. (Abundant colored glands like globose bodies are found on

Fig. 1393

a section of our material but are not attached and I think are probably of insect origin.).

This large white species of the East was named by Junghuhn from Java. I collected it rarely in Samoa and our figure 1393 was made from a fresh specimen. Laschia Holtermannii as illustrated by Holtermann is surely same species. The type is at Berlin.

LASCHIA TONKINENSIS. (Fig. 1394 enlarged). This species from China is a white plant, about a cm. broad. It has a short stipe and a strongly tessellate surface. The spores are recorded 8-10 x 10-12 and it is said not to have crested cells. The original specimens are in Patouillard's herbarium. I have a collection from V. Demange that agrees. I made the spores to be subglobose, about 12 mic.

Fig. 1394

LASCHIA TESTUDINELLA. This name was based by Robert Fries on a Laschia that grew in a hothouse at Gothenburg, on material supposed to come from Java. The color was described as dark grey but figures as greenish yellow. Size 1 to 2½ cm. Stipe very short. Surface strongly tessellate. Microscopic structure not stated excepting spores oblong, white. (Cfr. Grevillea, Vol. 16, t. 172).

Group 4.—"Small," from ½-2 mm. with distinct stipe 1 mm. or more.

LASCHIA AURISCALPIUM (Fig. 1395 enlarged). Pileus minute, 1-1½ mm. with short, lateral stem, 1 mic. Surface even, color when dried pale almost white, and when soaked has a pale yellow cast. Cristated cells, long, cylindrical, beautifully cristate, found on pileus surface and pore edges. Color glands numerous on pileus and edges of pores, scanty on pore surface. Spores 8 x 10, hyaline, guttulate.

Fig. 1395

Laschia auriscalpium was named by Montagne from Brazil in 1854. It is not an orange species as they seem to think at Berlin. The types are very scanty

in the museums and I did not cut them, but I believe they are the same as those I received from Rev. Torrend. They are of the same size and color. The curious, cylindrical, cristate cells (Fig. 1388) are beautiful microscopic objects, and not known to me on any other species.

SPECIMENS.—Rev. Torrend, (167, 94, 96).

RELATED SPECIES OR SYNONYMS.—Sessile form. I have from Rev. Torrend (96) a sessile plant of same size and color and with same microscopic details. I take it to be a sessile form of Laschia auriscalpium. It seems to me the very peculiar, cylindrical, crested cells (Fig. 1388) are of more importance in classification than the stipe character.

Laschia flava from Brazil, types in alcohol at Berlin, are of the same size and stipe as Laschia auriscalpium, but the cristated cells shown on the drawing are of a different type.

LASCHIA RUBRA. Pileus minute, 1-2 mm. with lateral, slender, stem 2-3 mm. long. Surface even. Color (both pileus and stem) dark red (probably orange when fresh). Context and palisade basidia hyaline. Spores not seen. Cristated cells and glands absent. Cortical cells irregular, angular, deeply colored.

The color resides in the color cells of the pileus, forming a cuticular layer. The species is same size as Laschia auriscalpium, differing in its deep orange color and microscopic features. It is only known from Brazil. Specimens, Rev. Torrend (663).

LASCHIA CALAMICOLA. This is a very small, white species about 2-3 mm. broad with slender stipe in same plane as pileus, 3-4 mm. long. It came from Java and the types in alcohol are at Berlin. It is the only white species named of similar size, and this may not have been white originally, before the alcohol took out the coloring matter. Nothing is really known about it.

Group 5.—Minute (or small) species, 1-2 mm. Stipe none or very short.

LASCHIA PEZIZOIDEA (Fig. 1396 enlarged) very small, 1-1½ mm. (apparently) white, attached by a minute point but reflexed and applanate to the host. Cristated cells ovate or globose, hyaline, on surface and edges of pores. Color glands abundant in the subcuticular tissue and hymenium. Basidia hyaline, club shaped with granular contents. Spores piriform, apiculate, 6 x 8.

Fig. 1396

Originally from Cuba, I think the same plant was named Laschia pezizaeformis from Bonin Island, and Las-

chia Goetzei from Africa. Section of the scanty types would have to be made to confirm it.

LASCHIA SACCHARINA (Fig. 1397 natural size, Fig. 1398 enlarged). Pileus very minute, 1-2 mm. orbicular, white, scurfy, even, with short, lateral stem, 1-2 mm. long. Crested cells, subglobose, hyaline, dense, covering the surface and edges of the pores and forming the scurfy layer. Glandular cells abundant over the pore surface, even, globose or ungulate, smooth, filled with pale colored contents.

Fig. 1397

Fig. 1398

This little, white species seems frequent in South America. Originally from Ecuador, we have it abundantly from Rev. Rick and Rev. Torrend, Brazil. It was named saccharina from the scurfy cells, likened to a surface covered with powdered sugar. It is not known excepting from tropical America.

SYNONYMS.—Laschia pulverulenta, Brazil. Hennings got several collections from Ule, Brazil. Part he correctly referred to Laschia saccharina and others he discovered were new and named as above. What possible difference he imagined there was between them I could not tell on comparison of the collections side by side.

LASCHIA LONGICELLULIS. I have received several collections from Rev. Rick and Rev. Torrend, Brazil, that to the eye appear the same as Laschia saccharina, but under the microscope are quite different. The tissue appears to be vesicular, hyaline, in which are imbedded long, cylindrical, smooth, glandular cells filled with pale coloring matter. I find no cristated cells. Spores are 8 x 10, hyaline.

LASCHIA NIGRO-STRIATA is a small (2-3 mm.) dark species named at Berlin from Java. It appears at first to be resupinate but is recurved on a very short, black stipe. I have seen the same I think at Paris, misreferred to Laschia semipellucida. The latter is unknown to me from any specimens, but appears from the description to be Laschia Sprucei and is surely not this little species.

LASCHIA CINNABARINA is a very small species, 1-2 mm. but peculiar in color, which is bright red and still retained on the old specimens. It is known at Kew from Cuba and Brazil. It appears resupinate, but is really reflexed and attached by a point. Microscopic features not known to me.

LASCHIA GAILLARDII from the description and figure is very close to the preceding, but is shown as a yellow plant. It has the same sessile (dimidiate) attachment. It came from South America.

LASCHIA RETICULATA is based on a single specimen from Traill, Brazil. It is very small, about 2 mm. and was described as white, though more recent specimens of what I believe to be the same thing from Brazil, are of a pale rose color, and were named Laschia amoene-rosa. Also from Africa, named Laschia bibundensis. The feature of all these collections is that the plants are dimidiate, not stipitate nor attached by a point as in other species.

LASCHIA TORRENDII (Fig. 1399). Minute, 1-2 mm. with a short (1 mm.) lateral stem. Surface even. Color dark brown. Context colored. Hyphae 6-8 mic. thick, not gelatinous. They appear to me hyaline with colored, incrusting granules. Pores minute. Basidia palisade, sub-hyaline. Spores hyaline, 4 x 5. Cuticular layer of deeply colored cells, yellow under the lens. Glands large, cuticular, globose. Cristated cells none.

While these specimens have a short, lateral stem, they are bent over and lie flat on the host. Probably they grew on the under side of a log. This differs from all other Laschias I have examined in having colored context. Specimens from Rev. Torrend, Brazil (418).

Fig. 1399

Other Species of Laschia.

Additional species and synonyms were given on page 646 Myc. Notes, also on page 815 we considered those "Laschias" that are Campanellas. We summarize the remaining species in order to clear up the subject. There are in our Index ninety-three names, mostly described as new species of Laschia, and there are sixteen, or one out of six that appear to me to be good and four of them are doubtful. Hennings in his day received thirty-two collections and found there were twenty-one new species among them. I think only four had any value. The following belong to the genus Auricularia and are all the same species, Auricularia delicata, viz: Laschia lamellosa, Berkeley, mss. at Kew; Laschia lurida, Cesati, Ceylon; Laschia tremellosa, Fries, India; Laschia velutina, Léveillé, Brazil.

Laschia crustacea, Junghuhn, Java, is a Poria compiled in Saccardo as Hymenogramme (Cfr. Letter No. 37); Laschia spathulata, Junghuhn, Java is a Favolus now well known from the Philippines;

"Types" of the following either do not exist or are too fragmentary and scanty for any conclusion whatever to be drawn from them. The subject would be that much better off if they had never been published. Laschia aurantiaca, Ayres mss. at Kew; Laschia flabellum, Cooke, South America; Laschia intermedia, Berkeley, Cuba; Laschia longipes, Berkeley, Pacific Island; Laschia micropora, Patouillard, Mexico; Laschia micropus, Berkeley, Australia; Laschia minima, Junghuhn (as Polyporus), Java: Laschia semi-pellucida, Zollinger (as Favolus), Java; Laschia valparaisensis, Hennings, Chile; Laschia viridula, Cooke, South

America. Laschia subvelutina, India Berkeley, rests on a single, inadequate specimen, but not a Laschia. I would not say without cutting it whether it is a Campanella or an Auricularia.

The following are unknown to me and there are no types in any museum that I have visited: Laschia antarctica, Spegazzini, South America, seems to be papulata; Laschia cinereo-pruinosa, Australia, Kalchbrenner, from description a very large species, "5 cm." broad with large pores but probably it is Auricularia intestinalis and not a Laschia at all; Laschia changensis, Asia, Rostrup, from description probably Campanella purpurea; Laschia duriscalpium, as a specimen from Africa is labeled at Berlin, seems not to have been published (fortunately); Laschia Eberhardii, China, Patouillard, I have not seen. It belongs in Group 3 and is verdigris color and 3 cm. in diameter. Seems to be the same as testudinella; Laschia guaranitica, Spegazzini, South America, is no doubt Polyporus pusillus (rhipidium) as intimated by the author ; Laschia infundibuliformis, Brazil, Berkeley. The single specimen that represents this is very unsatisfactory, but is not a Laschia, I think. Laschia magnifica, Brazil, Hennings, is no Laschia; Laschia rubella, Africa, Saccardo, is probably Laschia Thwaitesii.

RARE OR INTERESTING FUNGI RECEIVED FROM CORRESPONDENTS

CLATHRUS CANCELLATUS, FROM SERGEANT W. A. ARCHER, A. E. F., FRANCE (Fig. 1400).—We present a photograph of a dried phalloid (Clathrus cancellatus) just to show what nice specimens can be made of phalloids if care is taken in drying them. This was made by W. A. Archer, Sergeant in the U. S. Army, A. E. F., at St. Nazaire, France.

Fig. 1400

To dry a phalloid it must be dried rapidly, and at the same time not in the hot sun. The best method is to lay it on the window ledge and then raise the window just a little, about an inch, so that a current of air passes over it. By this method it will dry in a few hours. Every director of a tropical botanical garden should direct the gardeners and others connected with the gardens to bring into the office and dry in this way any phalloid that may be found. If the gardens would do that and then forward to us the dried specimens, protected so they would not be crushed in the mails, it would be only a short time until we would have a complete knowledge of tropical phalloids, instead of the fragmentary information we now have on the subject. Clathrus cancellatus is rather a frequent plant in southern Europe, but very rare in the United States. The only certain record we know is a specimen from Florida that is preserved in the Harvard museum.

LENTINUS RIVULOSUS, FROM DR. S. J. BONANSEA, MEXICO (Fig. 1401).—Pileus cyathiform, fawn color, with glabrous,

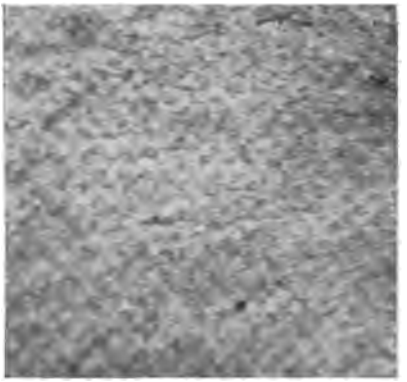


Fig. 1401.

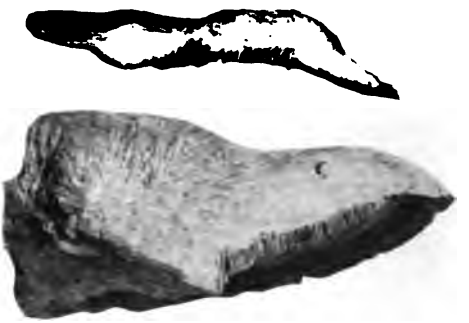


Fig. 1402.

delicately rivulose surface. Gills pure white, rather close and narrow. Stipe white, glabrous, longitudinally striate. Spores large, elliptical, 12 x 24, hyaline, smooth, also numerous small, piriform, about 4 mic.

This is an exceptional Lentinus in several respects, the glabrous, rivulose surface, pure white gills and stem, and large spores are features we know in no other species. While we find these large spores abundantly attached to the gills they are so different from what we expect that it is difficult to believe they belong to the plant. They are such spores as one finds in Cyathus.

We present a photograph of the surface of the pileus enlarged sixfold. We do not figure the plant, but it is very much the shape and size of Lentinus chordalis found (Figure 1377) on page 824.

HYDNUM PULCHERRIMUM, FROM DR. J. F. BRENCKLE ARKANSAS (Fig. 1402).—The receipt of two dissimilar plants as the same collection led us to go over our specimens to find if we have not been confusing two species under the above name. We find two general types, one a thin plant (upper figure) with compact flesh, the other (lower) a thicker plant with the upper surface resolved into fibrils (like the section Funalis of Polyporus). At first view they are different, but when we come to compare our various collections we could not sort them definitely, hence conclude that to make two species of them would be impracticable.

DACRYOMITRA DEPALLENS, FROM REV. J. RICK, BRAZIL (Figs. 1403, 1404). (Cfr., p. 803.)—We have an additional and fine collection from Rev. Rick that we illustrate (Fig. 1403). We did well to put it in Dacryomitra for the stipes which were rather vague in the "type" are prominent and distinct in this collection, and a marked feature of the plant, although from a top view the stipes

are hidden. It is wonderful what a little soaking will do for dried, tremellaceous plants. It is hardly believable that our figure on the left, which is the dried plant as received, would come out as shown in the other figure. One can dry a Tremella and ten years after soak it and have it in just as good condition as the day it was collected. We

Fig. 1403 Fig. 1404

Dacryomitra depallens.

hope our friends in tropical countries will not fail to collect and *dry* every tremellaceous fungus they find. Little is known as to the tropical species. Everything ought to be known about them and would be if we had collections enough.

POLYSTICTUS PINSITUS, FROM REV. J. RICK, BRAZIL (Fig. 1405).—The series of specimens that Rev. Rick sends show almost as much variation in degree of color as Polystictus versicolor. Some are pale (almost white) others dark. Some have more silky hairs than others. In the East, a pale plant (called Polystictus cryptomeniae, page 758) predominates, but I am beginning to think it is not practicable to designate the different shades. In keeping with historical accuracy the pale plant can be called Polystictus pinsitus, the dark plant Polystictus villosus (Cfr. Pol. Issue, page 47). We illustrate a pale form that corresponds with the usual Eastern form.

Fig. 1405

Polystictus pinsitus has had many names, but in practice it is not practical to maintain them any more than it would be to designate the various color forms of Polystictus versicolor.

DACRYOPSIS NUDA, FROM PROF. H. C. BEARDSLEE, NORTH CAROLINA (Figs. 1406 to 1408).—We refer this from the

description only as we have no notes on the type. It was named by Berkeley from England as Ditiola nuda, and when dry it appears to be a Ditiola, as the short stem covered with a white pubescence seems of a different texture from the head. On soaking, however, the stem is seen to be formed of homogeneous, gelatinous tissue, the same as the head, hence belongs to Massee's genus Dacryopsis, which is simply a stalked Dacryomyces. When the species become well known I doubt if it will be found practicable to keep Dacryomyces, Dacryomitra, Dacryopsis and Guepinia distinct from each other. All have the same type of basidia (furcate) and practically the same spores (cylindrical, curved, septate in germination). The following are the supposed differences:

Sessile—Dacryomyces.
Stalked, heads globose, Dacryopsis.
Stalked, heads conical, Dacryomitra.
Guepinia has a flattened or stalked pezizoid form with the hymenium on one side only.

Dacryopsis nuda, when dry, seems to have a short but distinct stalk, white and apparently different from the orange head, hence by Berkeley was put in Ditiola, which has a nongelatinous stem of a different texture from the head. Ditiola radicata is common in Sweden on pine and recorded from the United States. I do not know it with us and perhaps Dacryopsis nuda has been taken for it. As far as I know the latter is not previously recorded with us.

Fig. 1406

Fig. 1407

Fig. 1408

Dacryopsis nuda.

Our figures represent Dacryopsis nuda. 1406. dried, natural size. 1407, same, soaked. 1408, same, enlarged sixfold.

POLYSTICTUS FELIPPONEI, FROM DR. F. FELIPPONE, URUGUAY (Fig. 1409).—Plant unicolorous, Dresden brown, thin, dimidiate, imbricate. Surface dull, smooth. Context thin, con-

colorous. Hyphae pale, 6–8 mic. thick. Pores minute, shallow, concolorous. Cystidia none.

Brown Polystictus (Section 119) are not numerous. We have noted two before, viz.: Polystictus phaeus from Japan and Polystictus dialeptus from Africa. We do not find spores with certainty. Those we see floating around are globose, 6–8 mic. smooth, pale colored, but they may not belong to the plant. The plant was collected at Paseo del Prado, Montevideo.

POLYPORUS GREENII, FROM PROF. A. YASUDA, JAPAN (Fig. 1410).—This has the same color, texture, surface and spores as

Fig. 1409

Fig. 1410

Cyclomyces Greenii and is surely the polyporoid form. It is the first specimen with true pores I have ever seen. The rare Cyclomyces Greenii has been found in Japan (Cfr. Myc. Notes, p. 633). However, that specimen was not truly cylcomycoid. It may develop that in Japan this plant is more inclined to polyporoid forms. Prof. Yasuda sends the plant under the mss. name Polyporus Nambai, but it is much better that hymenial variants of the same species should have the same specific names.

POLYSTICTUS SCOPULOSUS, FROM PROF. A. YASUDA, JAPAN (Fig. 1411).—Pileus spathulate to a short, flattened stipe in same plane. Surface chestnut brown, glabrous, scopulose with appressed rugosity. Context pure white, stuppeus. Pores hard, minute, adustus, with rough surface, slightly irpicoid. Spores?

Though we know no similar plant we would enter this in section 22 of Stipitate Polyporoids. This is a true Polystictus or perhaps Trametes with stuppeus context and hard, rigid pores. We find

abundant spores, fusiform, 6 x 18, pale colored, but so unusual for a plant of this nature that we suspect they are not its true spores.

Fig. 1411
Polystictus scopulosus.

PODOCREA XYLARIOIDES, FROM PROF. A. YASUDA, JAPAN (Fig. 1412).—When we received these specimens from Prof. Yasuda, labeled Podocrea, we thought they were conidial Xylarias. However, a section shows large, globose perithecia, which are immature but uncolored and the plant is an evident Podocrea. We found neither spores nor asci in the perithecia, but separate spores floating around are piriform, 4 x 8, hyaline, smooth. We have never worked over the genus Podocrea in the museums, but are unable to find any description at all approximating the specimens as to color, which is fuliginous brown with black stripes. As previously stated the plant appears exactly like conidial Xylarias.

Fig. 1412

The genus Podocrea is only an erect Hypocrea, and formerly the species were so classed. A previous species referred (with doubt) to Podocrea Cornu-damae, has been recorded from Japan (Cfr. Mycological Notes, p. 810).

MYCOLOGICAL NOTES.

BY C. G. LLOYD.

No. 58.

CINCINNATI, O. MARCH, 1919.

ARTHUR LISTER

MYCOLOGICAL NOTES

Issued by C. G. LLOYD.

224 West Court Street, - - CINCINNATI, OHIO.

SUBSCRIPTION PRICE.—A little personal interest on the part of the recipient in picking up and sending to my address, specimens of the larger fungi. All are desired excepting specimens of fleshy Agarics. Simply dry the specimens and send them in.

ARTHUR LISTER

They who do the best work in science are often those who are not compelled to work, but who toil solely for the love of knowing, of discovering the secrets of Nature. This is well exemplified in the life of Arthur Lister, the man who wrote the best book yet published on Myxomycetes, and who will, for many years to come, be *the* authority in that field. Mr. Lister was a prosperous business man, an Englishman of wealth, but his chief pleasure in life came to him from his natural history studies. He was more fortunate in his tastes than the familiar "idle rich," who spend their time on mere society fads or in useless wandering. Born in a country town, he was as a boy attracted to the habits of birds and other nature studies. He thus acquired a general knowledge of flowering plants, mosses, fungi, lichens, etc., but it was not until the latter years of his life, that he accomplished his chief work, when he turned to a more restricted field, specializing on the lowly but beautiful forms of fungi known as Myxomycetes. This he did not begin until he approached his fiftieth year, and he was sixty-four years of age when he published his monumental work, the Monograph of the Mycetozoa.

Lister's work did much to establish the nomenclature of the Myxomycetes, and surely no class of fungi more needed his care, there being on an average five synonyms for every species. According to my count, about 175 species of Myxomycetes are recognized by Lister, these covering nearly 800 synonyms and species unknown except to those who "discovered" and named them. It is quite evident that a great portion of Lister's time was occupied in investigating and correcting the mistakes of others.

While I know nothing of the merits of the nomenclature of Myxomycetes, it seems to me a pity that the names adopted by Lister and generally accepted on his authority, should in a second edition of his great work (published after his death), have been largely discarded in favor of a theoretical, "Made in Germany" plan.

Lister is dead, but he it was who worked out the history and synonyms of Myxomycetes. If one will take the pains to look up the

"priority" claims on which many of the names adopted by Lister were juggled and displaced, he will find that they are based, mostly, on records given in Lister's own work.

THE GENUS CAMPANELLA

CAMPANELLA CUCULLATA, FROM DR. J. BURTON CLELAND, NEW SOUTH WALES.—Pileus pure white when fresh, gelatinous, attached dorsally by a point or very short stem. Hymenium venose, of radiating veins which are connected by numerous intermediate veins. Basidia clavate forming a palisade layer. Cystidia none. Spores subglobose, 3-4 mic.

This unique little species seems to occur fairly frequent in the East, and I found it several times in Samoa. It has had a varied and interesting history, both generically and specifically. When one looks through the Laschia covers in the museums he is at once impressed that two entirely different generic types are included. The most of the collections are little gelatinous plants with distinct pores like a Polyporus. As this includes the greater part of the species we shall continue to apply the generic name Laschia to it, although as we have published (page 802) in its original sense it was not different from Auricularia with no real affinity to the present genus. The second type of plants found in the covers and called Laschia does not belong with the Polypores at all and does not have pores, but has its hymenium veined. To this genus Dr. Cleland's little plant belongs. As to generic names, Berkeley, Montagne and Fries never distinguished them. The first name that we could find for this species is "Polyphleps chloroleucus," a manuscript name endorsed on a fine figure of the plant, made in Java probably eighty years ago and preserved at Leiden. The artist and author is not known at Leiden, but from collateral evidence at Kew, I decided it was Kurz. Next Patouillard restricted the name Laschia to this little genus and renamed all the other Laschias. That proceeding is, in my opinion, a perversion of an established usage and name and should not be followed. Next Hennings proposed to call it Campanella, though he described it as "skinny" and his specimen still preserved in alcohol at Berlin is gelatinous.

SYNONYMS.—Merulius cucullatus as published by Junghuhn (1839) though not compiled in Saccardo until 1912 and then as Laschia cucullata. Campanella Buettneri, Africa, Hennings type in alcohol at Berlin. Merulius cuticularis, Java, Léveillé, as compiled in Saccardo, type at Paris. Laschia celebensis, Java, Patouillard, based on the identical collection named by Léveillé and discovered to be a "new species" forty years later. Laschia Javanica, Java, Holtermann, and also from the figure probably (in part) Marasmius Campanella of the same author. The two following from the American tropics are probably the same though known from very scanty material.

Fig. 1358.

Laschia lamellosa based on two little specimens from Venezuela and Laschia alba from Cuba, a single specimen about the size of a tack head. These three little specimens represent all that are known of the species in the American tropics. Dr. Cleland's specimens are the first that I have seen from Australia, but Laschia micropus, as found in the Handbook (no type exists) was probably based on the same.

Other Species.—While we are on the subject we will list what little is known as to other plants that appear to belong to this genus. Ten collections only are found in the museums, each named as a "new species".

Campanella pustulata. Known to me from abundant specimens at Kew and sketch by Broom in the British Museum. Pileus spathulate. 3-5 mm. sessile or with a short stalk in same plane. At first white, then cream colored, finally deep crimson. Soft, gelatinous and from Thwaite's notes "viscous even when dried rapidly". Gills few, united by strong veins. Spores vary from 7 x 9-13 to subglobose, 7 x 9.

Petch gives an account of the plant from fresh specimens from which we have largely drawn. He states, and to this we subscribe, that "Cooke's figure in the Handbook of Australian Fungi has no relation to this plant at all".

Laschia citrinella, named by Hennings from Africa, appears to me to be the same thing and I would remark that while Hennings (strangely) adopted Patouillard's shuffle (Favolaschia) in the naming of this "new species" he did not know even the characters of the "genus".

Campanella purpurea. This is based on four collections, each named as a "new species" by Berkeley from Cuba, viz: Laschia purpurea, Laschia caerulescens, Laschia pensilis and Laschia subcaerulea. Though some are sessile, others stipitate, they all appear the same to me. They have the venose type of hymenium and are characterized by a purplish color, still evident on the specimens. Laschia Dussii from Guadeloupe and Laschia cantharelloides from Java, one described as "reddish brown", the other as "reddish umber" are probably the same.

Campanella agaricina was named and figured by Montagne from a single specimen from Chile as Exidia agaricina. It is thin, of a yellowish color and belongs to this genus on its hymenial configuration. It is known to this day from this one specimen, and I hope Mr. Espinosa will find it so we may learn what it really is. Specimens so referred from Venezuela did not seem to me to be the same.

Laschia Curtisii is based on two collections from Cuba and imperfectly known. They did not appear to me to be the same. One is glued with hymenium down so I can not say as to its characters, and the other with the hymenium up is a Campanella and does not fit the description of "pores subround". It is probable that Berkeley had two different things and neither of much value.

RARE OR INTERESTING FUNGI RECEIVED FROM CORRESPONDENTS

DUROGASTER BRUNNEA, FROM NELSON NÚÑEZ, ECUADOR (Fig. 1359).—Never but once before since we have been working on the subject have we received such a curious Gasteromycete as this. It is totally unlike anything heretofore known. Gasteromycetes are usually soft and fleshy plants. This is as hard as ebony and when we wished to cut it we could not cut it with a sharp knife and had to saw it. The saw marks are shown in our photograph of the section enlarged. The spores are borne in a layer of loculi arranged in a peripheral manner as shown in the section (Fig. 1361), or rather I think in peridioles, for on mashing them on a slide the containing sacs are readily seen. The spores have every analogy to those of the Nidulariaceae.

Durogaster brunnea. Plants probably enclosed in a volva when young, the remains of which persist at the base of the stem. Stem hard, ligneous, continuous to the apex. Peridium indistinct, not a

definite membrane, extremely furfuraceous, under the lens resolved into scale-like bodies. Spores hyaline with thick, smooth walls, globose, varying in size from 8 to 32 mic. The spores appear to be borne in peridioles contained in peripheral loculi.

Fig. 1359.

Fig. 1360.

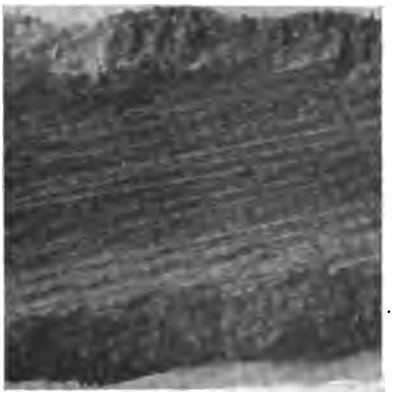


Fig. 1361.

Durogaster brunnea.

The systematic position of the plant is in much doubt. The general appearance is that of Cauloglossum, but the absence of a definite peridium, the nature of the spores and the method in which they are borne together with the extremely hard tissue, all would tend to remove it from other Gasteromycetes. On the other hand the general appearance and volva is that of Podaxon and Cauloglossum. The arrangement of the loculi suggests a Pyrenomycete, but there is no indication of asci and its general nature is entirely different.

We have written to Mr. Núñez, and hope to be able to give additional information as to its habits, occurrence, etc.

RIMBACHIA PEZIZOIDEA, FROM REV. C. TORREND, BRAZIL (Fig. 1362).—This was named Merulius pezizoideus by Spegazzini, and afterwards called a new genus and named Rimbachia paradoxa by Patouillard. It has the shape of a little stalked Peziza

with rugulose hymenium on upper side, and hyaline spores (4 x 6) which are borne on basidia. I feel that it is entitled to generic rank, although these monotypic genera are embarrassing.

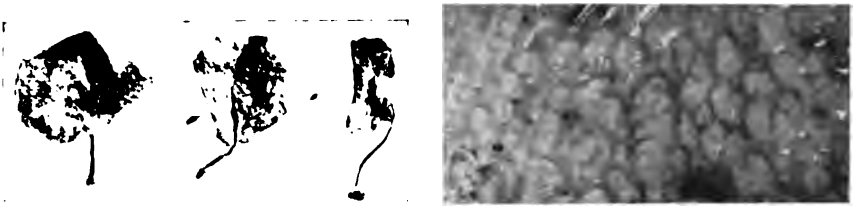


Fig. 1362.
Rimbachia pezizoidea.

GEASTER TOMENTOSUS, FROM GEO. L. FISHER, TEXAS (Fig. 1363).—Unopened plant. subglobose. Exoperidium pale, with matted tomentum, opening about half way with cup-shaped base. Endoperidium pale with dark, even mouth. This can be defined in a few words as being Geaster saccatus with tomentose exoperidium. As it grows with us, Geaster saccatus is always found on rich humus of dense, frondose woods. The Texan plant occurs in open pine woods, evidently in sandy soil. The different exoperidium may be a variation due to different habitat, but at any rate it deserves a name. Geasters are usually externally smooth. This is the second hairy one that I ever saw. The other, Geaster trichifer from Brazil, was considered on page 804.

Fig. 1363.

Our figure (1363) does not show the tomentose nature of the exoperidium as plainly as we would wish.

TREMELLA MELLEA, FROM MARCEL R. ESPINOSA, CHILE (Fig. 1364).—Plicate, foliaceous. Color honey yellow; texture soft gelatinous, but more firm than the usual Tremella. Hymenium amphigenous. Basidia globose, 12 mic., pale yellow, cruciate septate, imbedded at various depths, but forming a compact layer. Spores elliptical, 3½ x 6 hyaline. This grew evidently on wood. It is related to Tremella mesenterica, but more foliaceous, and of a different color. I cannot reconcile it with either of Moeller's yellow species, and these are all that are really described from the tropics that can be recognized. The microscopic feature that is unusual is the numerous basidia, at different depths, but so close to each other that they form a distinct layer.

Fig. 1364.

POLYPORUS SMARAGDINUS, FROM DR. J. F. BRENCKLE, ARKANSAS (Fig. 1365).—Pileus dimidiate, 1–2

inches thick. Surface dull, uneven, with thin, buff cuticle. Context white, hard when dry. Pores minute, 4-6 mm. deep, with pale greenish tissue and brown mouths. Cystidia none. Spores globose, hyaline, 6 mic. Conidial spores abundant, small subglobose, 2-3 mic., hyaline.

Fig. 1365.
Polyporus smaragdinus.

The colors are those of the dried specimen. I judge that of the pore mouths has changed in drying. The pale green pore tissue is an unusual feature. I do not recall it in any other species. The plant goes in Section 89 and is the second species in the section. Dr. Brenckle collected it on a sycamore log in Arkansas.

A second collection from Dr. Brenckle was a mature, dried specimen, and the hard flesh and texture is so hard and similar to that of Polyporus osseus that we made a microscopic comparison to find if it should not be referred to a sessile form of osseus. We find them quite different plants. The pores are not really colored in osseus and the spores are allantoid, 2 x 5.

But curiously enough we find among our "osseus" determinations a plant from C. J. Humphreys, Madison, Wisconsin, which is sessile and has the general appearance of Polyporus smaragdinus, but which has the spores of Polyporus osseus. We have relabeled the collection Polyporus ossiculus.

PORODISCUS RICKII, FROM REV. J. RICK, BRAZIL (Figs. 1366 to 1370).—No tropical country has been better worked for its fungi than Brazil and one would hardly expect such a novelty. This genus is a Pyrenomycete with pores and I believe nothing of the same order has been recorded. Fruiting bodies seated on a thick, black, flat, carbonous base. Stipe short, thick, carbonous. Fruiting body a convex head, carbonous but not black, rather of an olive cast, punc-

tate with pores. Perithecia arranged in a palisade layer. Spores globose, deep colored, smooth, 4–8 mic.

Fig. 1366.

Fig. 1367.

Fig. 1368.

Fig. 1369.

Fig. 1370.

Porodiscus Rickii.

We present photographs showing the structure better than we can describe it. They show a surface view, a side view and a section, also the carbonous pad bearing two fruiting specimens. All are enlarged for the plant is quite small, as shown in specimen natural size. The pores are not ostioles, as would naturally be supposed, but the perithecia are arranged between them. We find no asci, but do not question but that the plant is a Pyrenomycete.

Explanation of figures.—Figure 1366, plants natural size. Figure 1367, section of fruiting body. Figure 1368, top of same. Figure 1369, two fruiting bodies showing also the carbonous base. Figure 1370, side view of fruiting body. All figures are enlarged, six fold excepting the first.

POLYSTICTUS HEXAGONOIDES, FROM REV. G. TORREND, BRAZIL (Fig. 1371).—Pileus thin, rigid, glabrous, dark umber brown. Context thin, dark umber brown. Pores very minute, shallow, brown or glaucous. Setae none. Spores not found. We received this as Hexagona coriaceus, and it really should be classed in section "Tenuis" of Hexagona. But the very minute pores would for us remove it from the section where it is naturally allied. The

leading features are the dark, umber brown surface and context, similar in color to Polystictus caperatus, and the minute pores. We would include it in section 117 with the similar aberrant Polystictus

Fig. 1371.
Polystictus hexagonoides.

luteo-olivaceus. This plant is quite close in appearance to Polystictus pertenuis, based on a specimen from Jamaica. The latter, however, has a pale, almost white, surface, and white context.

Fig. 1372.
Favolus caespitosus.

FAVOLUS CAESPITOSUS, FROM CHAS. H. BAKER, FLORIDA (Fig. 1372).—While we are convinced this is only a form

or perhaps a condition of Favolus brasiliensis, we give it a name for convenience, for it is so different in shape and habits from the usual plant. Favolus brasiliensis is our most frequent, white, southern species. We gave, Pol. Issue, p. 20, a photograph and account. It has a glabrous, striate surface. There are no cystidia and the spores are 4 x 12, cylindrical. There are many collections of the plant in the museums from American tropics, but we have never seen one of this shape or these habits. The normal plant, as represented in our figure 258, has an excentric stipe, and a flattened, broad pileus. There is no objection to giving names to marked forms like this, and it is convenient for ordinarily one could hardly believe them to be the same. But they should not be called "new species."

PTERULA FRUTICUM, FROM JOHN GOSSWEILER, WEST AFRICA (Fig. 1373).—Slender, simple, 1 mm. thick, 5–8 cm. long, dark brown. Spores 3 x 4–5 subhyaline, smooth, appearing pale colored. In naming this as a Pterula I have not overlooked the possibility of it being the conidial state of a Xylaria. However, the hyphae are thick, deep brown, fleshy, and have not, I think, the structure of a Xylaria. I find no basidia, and it may not be a Pterula. A curious feature of the plant is abundant violet coloring matter, given off in an alkaline solution. Mr. Gossweiler sends a dozen specimens, every one growing from this same fruit. They look very much like Isaria on "bugs" and I was not sure they were not bugs until I cut one open.

Fig. 1373.

Bresadola has recorded Pterula fruticola growing on fruit of Pandani in Philippines. I am unacquainted with it, but from description it cannot be this plant.

DALDINIA ALBOZONATA, FROM GEORGE ZENKER, AFRICA (Fig. 1374).—We get so many specimens of the common Daldinia concentrica from all parts of the world that it is a relief to receive this nice collection of a species strongly distinct. It is rare, for this is the first time we have gotten it. Our photograph will show the distinctive shape of the plant, for all Daldinias are very much alike excepting as to shape and habits. This in form resembles our Daldinia vernicosa. It differs in dull surface, habits of growing densely caespitose, and more or less irregular by mutual compression, and in having pure white stroma zones alternating with narrow, carbonous zones. The white stroma zones are firmer than those of Daldinia vernicosa, and as far as I can note from these specimens do not become darker and finally hollow as in our species. Spores are small, mostly 4 x 8.

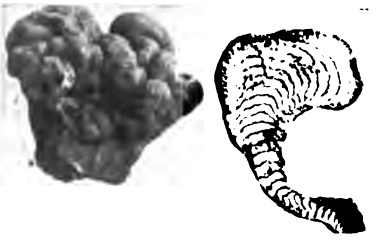


Fig. 1374.

POLYPORUS SETIGER, FROM J. T. PAUL, AUSTRALIA (Fig. 1375).—It has been several years since we have been favored with specimens from Mr. Paul and we have had this on hand (unnamed) for some years. We have determined it recently when working with the similar plant, Polyporus atrohispidus, to which it is very similar as to its surface. The dark, strigose hairs of both are similar. The context of Polyporus setiger is white and unchangeable, while in Polyporus atrohispidus the context is dark, apparently changing in drying. The spores also are entirely different. This is the only specimen of Polyporus setiger we have ever gotten.

Fig. 1375.

POLYPORUS ATROHISPIDUS, FROM DR. F. STOWARD, WEST AUSTRALIA (Fig. 1376).—Pileus dimidiate, 3–4 inches broad, an inch thick, sessile. Surface of dried plant dark, with black, hispid hairs, becoming denuded. Context (and pores) discolored (in drying no doubt). Pores small round. Cystidia none. Spores 4 x 6, guttulate, hyaline, smooth. This plant belongs to section 82b of Apus Polyporus, close to Polyporus setiger. It is an Australian section, absent from Europe and United States. The species differs from Polyporus setiger principally in its spores, and darker color of context. The context of the plant in dried specimens is fuliginous above, paler than below, and it impresses me as a plant that probably changes color in drying. I have now three collections of this plant from Australia, viz.: two from Dr. Stoward, one from E. Jarvis. In addition, two collections (Nos. 183 and 384) from Dr. Cleland, although the pilei are not strigose. I think the surface hairs must be detersive. Polyporus pelles named on page 327, Apus Polyporus, is a very similar plant, possibly the same species, but the soft, dense hairs like the fur of some animal, give it a very different appearance.

Fig. 1376.

LENTINUS CHORDALIS, FROM NELSON ÑÚÑEZ, ECUADOR (Fig. 1377).—Pileus cyathiform, pale buff, glabrous on the margin, with white, furfuraceous pubescence towards the center. Spores 3 x 6. Gills white. Stipe white, proceeding from a bundle of white, mycelial cords.

Fig. 1377.

Fig. 1378.

Fig. 1379.

Fig. 1380.

Fig. 1381.

Explanation of figures. Figure 1377, Lentinus chordalis. Figure 1378, Guepinia elegans. Figure 1379, Dacryomyces pallidus. Figure 1380, Tremella compacta. Figure 1381, Dacryomitra dubia.

I cannot understand the manner in which the curious mycelium cords (that look like the wood packing we call "excelsior") are produced. They proceed from a thin, hard, brown placque that appears

to me to be a thin piece of wood. At the base they are brown and hard, of the same texture as the placque, and seem to be a growth of the placque. In that case what I take to be a piece of wood must be in the nature of a thin sclerotium, but I do not pretend to state that this is a fact. I hope Mr. Núñez will observe the plant and give us further facts on the subject.

GUEPINIA ELEGANS, FROM REV. C. TORREND, BRAZIL (Fig. 1378).—This is a species of the United States and with us always seems to grow on elm. It is rare and was named by Berkeley years ago. This is not the first time it has been collected in Brazil. Ule sent it to Hennings, but the record was lost in Hennings' discovery that it was a "new species." He called it Guepinia jurulensis. Peck also discovered it was a "new species" (twice), Guepinia biformis and Guepinia bicolor. Our illustration is from fresh specimens collected around Cincinnati.

DACRYOMYCES PALLIDUS, FROM REV. C. TORREND, BRAZIL (Fig. 1379).—Pulvinate-gyrose, attached by a small attachment, pale amber color when soaked out. Basidia hyaline, forked. Spores subhyaline, 8 x 16, slightly curved mostly 3 septate.

About all one can do with foreign tremellaceous plants is to name them. One cannot tell much about either the descriptions or the classification of the small species that have been named. Spegazzini has a small amber colored "Dacryomyces" (propoloides), but as he records it as erumpent and found no basidia or spores, it is a question. I never examined a Dacryomyces that I did not find abundant spores.

TREMELLA COMPACTA, FROM REV. C. TORREND, BRAZIL (Fig. 1380).—Color when fresh, ochre yellow; when dried, reddish brown, soaking out to about a buff yellow. Cerebrine with obtuse lobes, hollow. Basidia globose, hyaline, 10 mic. imbedded. Spores globose 7–8 mic., hyaline.

We are glad to receive this species for tropical Tremellas do not come in to us as much as they should. Moeller named it Tremella compacta and gave a good photograph of it. The species resembles somewhat Tremella mesenterica, also found in Brazil, but has more obtuse lobes and is not so bright a color, and the European species is not hollow. When we first received it we thought it to be Tremella rufolutea which Berkeley named from Cuba, but we found it was hollow and we are sure that the Kew specimen of Tremella rufolutea is not hollow.

DACRYOMITRA DUBIA, FROM REV. A. BOUTLOU, WEST VIRGINIA (Fig. 1381).—When we soaked out these specimens we were in doubt whether to refer them to Dacryomitra dubia (Cfr., page 742) or name it as a "new species." As we have scantily collected the plant it was flattened (cfr. Fig. 1114), but these when soaked were turbinate. They were deep orange when dry, but on prolonged soaking became almost white with faint trace of yellow. The spores and basidia are the same, but as to that, there is but little difference in spores and basidia in all species of Dacryomitra or Dacryomyces. The question whether our plant is the same as Dacryomitra

glossoides of Europe is still unsettled, but as stated on page 742, we never saw a plant either in Europe or America that looks like the picture that Brefeld gave. Our photograph against a black background is misleading, as it gives the impression that the plant is white. They are orange when fresh and when dried.

STEREUM CORRUGE, FROM E. D. MERRILL, PHILIPPINES (Fig. 1382).—Sessile, from a broad base. Two to three inches

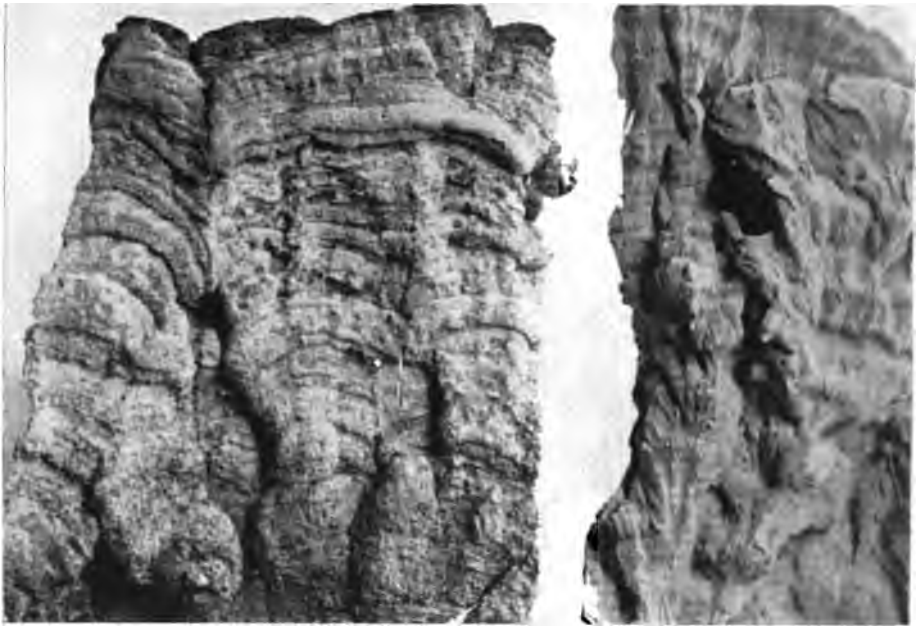


Fig. 1382.
Stereum corruge.

wide. Surface strongly corrugate, covered with a brown tomentum. Hymenium strongly corrugated, pinkish cinnamon color. Cystidia none. Basidia hyaline in a palisade layer. Hyphae subhyaline, 5–6 mic. Imbedded in the hyphae are bodies (I do not know a name for them) that appear like hyphae broken in short pieces, 60–100 mic. long, 10–12 mic. thick and of a deep reddish color which gives the color to the hymenium. This reminds me in color of the hymenium of Stereum involutum. The specimen is about a cm. thick and has three layers, but I am unable to state whether annual layers or more probably confluent layers or same year's growth. Based on Yates 25836 collection in Rizal, Luzon.

Although in general appearance this has hardly a suggestion (excepting as to hymenium color) of Stereum percome the "structure" is the same, and I have little doubt it is a Fomes condition of Stereum percome. We find no metuloids on this, but sometimes we find them on percome and sometimes we do not.

POLYPORUS PERTUSUS, FROM DR. CLELAND, NEW SOUTH WALES (Fig. 1383).—This belongs to the gilvus crowd, with the same color, spores and setae, but the upper flesh is soft, spongy, the same idea one notes in Polyporus fruticum. It was named by Fries as Trametes, from Africa, and there is a co-type (Fig. 1383) at Kew. In our pamphlet we did not maintain it as different from gilvus, but needing a name for Dr. Cleland's plant we went over our "synonyms" for gilvus and concluded this must be the Friesian plant. Fries described it "in tomentum curtum sed compactum soluta." It must be very rare for we never received a specimen before. The hard (lower) context is of the texture of licnoides rather than gilvus. We are much more pleased to get what we feel is a correct interpretation of an old name than if we had to give it a new name. Since the above was written we have gotten the plant also from the Philippines.

Fig. 1383.

Fig. 1384.
Lachnocladium brasiliense.

LACHNOCLADIUM BRASILIENSE, FROM GEORGE ZENKER, CAMEROON (Fig. 1384).—I found this same plant abun-

dantly in Samoa. It grew in dense clumps on the disintegrated wood where logs had rotted. It is ochraceous, rigid, with dichotomously branched hairs. Spores globose, hyaline, 3 mic. It seems to be a plant of wide distribution in the tropics, originally from Brazil. The only type we noted is at Kew, and it is very poor. Lachnocladium samoense, as named by Hennings, and Lachnocladium ambiginosum of Cooke are the same thing. We present a photograph that we made of the fresh plant in Samoa.

DACRYOMYCES HYALINUS, FROM PROF. H. C. BEARDSLEE, NORTH CAROLINA (Fig. 1385).—We refer this to one of Quélet's names, as we know no name in this country. It seems to answer Quélet's short description, but is surely not the figure that he cites, but he probably never saw the figure. We feel

Fig. 1385.

Fig. 1386.

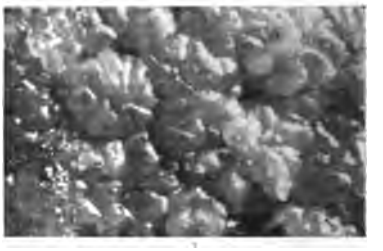


Fig. 1387.

Dacryomyces hyalinus.

quite sure it is Dacryomyces hyalinus in the sense of Bourdot who takes it as a variety of Dacryomyces deliquescens. It grows densely gregarious on decorticate wood and when dried forms amber colored "spots" as shown in Figure 1385. It readily swells when moistened (Fig. 1386), and is then pulvinate, plicate, and very pale almost hyaline with faint yellowish tint. Spores hyaline, 6 x 12, curved. It is the palest species we know in the genus. As a matter of history it is probably the original of Dacryomyces deliquescens of Fries' description, which it answers to the letter. But the name has been established in the sense of Bulliard with a far more common and more yellow plant.

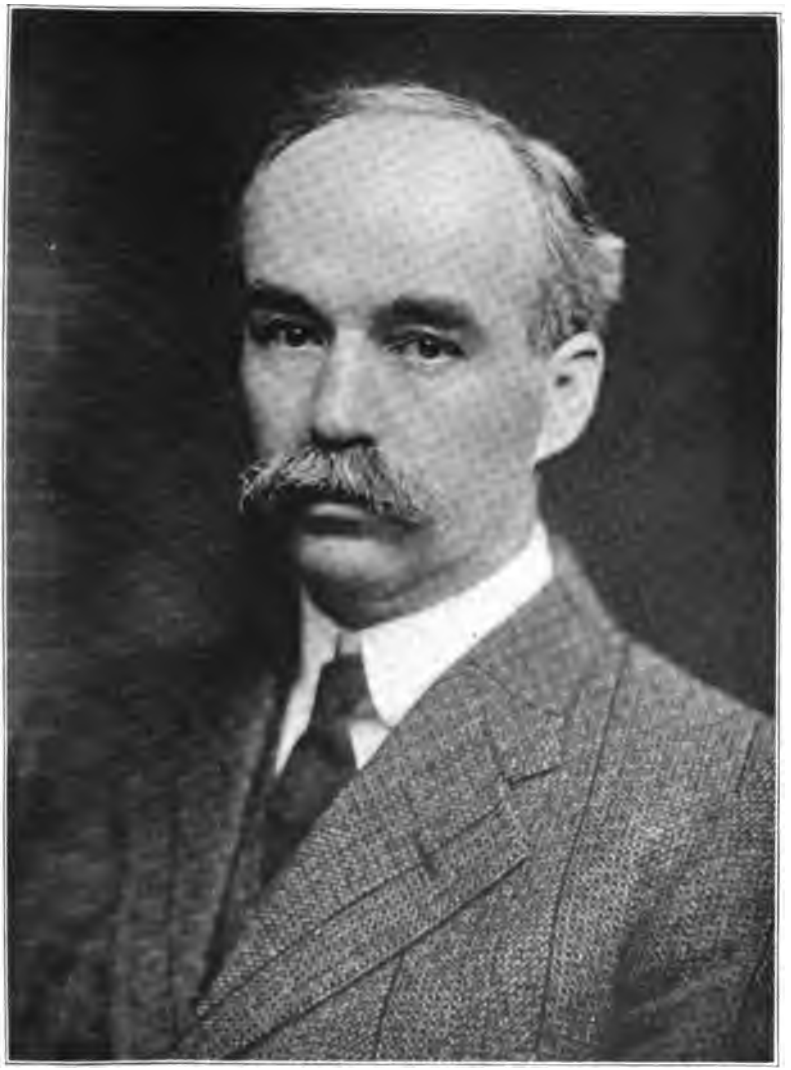
Our Figure 1386 is the plant natural size as it soaks up. Figure 1387 is the same enlarged about sixfold.

MYCOLOGICAL NOTES.

BY C. G. LLOYD.

No. 59.

CINCINNATI, O. JUNE, 1919.



GEORGE F. ATKINSON

MYCOLOGICAL NOTES

Issued by C. G. LLOYD.

224 West Court Street, - - CINCINNATI, OHIO.

SUBSCRIPTION PRICE.—A little personal interest on the part of the recipient in picking up and sending to my address, specimens of the larger fungi. All are desired excepting specimens of fleshy Agarics. Simply dry the specimens and send them in.

GEORGE FRANCIS ATKINSON

We are pleased to present a photograph of Professor George Francis Atkinson, kindly supplied to us by Professor H. M. Fitzpatrick. This was taken during the last year of Professor Atkinson's life and is an excellent likeness.

Professor Atkinson was for 26 years a teacher of Botany in Cornell University, and was the author of the "College Text Book of Botany," which is a standard work and used by many colleges. He also wrote a number of other text books on the subject. His chief work, however, was in the line of fungus studies, and he accumulated during his life a vast amount of notes, photographs and specimens, particularly in the Agaricaceae in which he specialized. Eighteen years ago he published "Studies of American Fungi, Mushrooms, Edible, Poisonous, etc.," which went through a second edition. It was really the first text book we had on agarics, but being issued during the earlier years of Professor Atkinson's work, only embraced a few of the most prominent species. As far as we know it was the first book that showed the practical application of photography in the illustration of agarics. Since that day photography has come into very general use in this and similar lines of illustration. This book did a great deal to stimulate interest in the agaric subject in the United States and led to other books, such as Miss Marshall's and Hard's.

During the years that have intervened since the publication of this first book Professor Atkinson was busily engaged in studying agarics and no doubt, had in view a more comprehensive and complete work. His sudden death occurred before he had opportunity to put this into effect, but his notes and photographs will be available for some future student connected with Cornell. While no final arrangements have been made for the disposition of his herbarium, photographs and specimens, they will doubtless be deposited with the Cornell Institution.

THE GENUS TRICHOSCYPHA

The receipt of a nice collection of Trichoscypha Tricholoma from A. H. Ritchie, Jamaica, has led me to go over the specimens in our museum, although I have done but little work with the Discomycetes. The genus is a tropical genus, first proposed by Cooke, and based on the pleurocellular hairs that form a fringe to the cup and in one species as shown in the enlargement (Fig 1414) cover the surface. It is a question, however, if it should be maintained as different from Sarcoscypha. According to the celebrated Otto Kuntze, who did not know a Peziza from a puff ball, and was eminently qualified to juggle names, the generic name is untenable, having been applied to a flowering plant or a bug or something else, and the names Pilocratera and Cookeiana have been proposed for it. The texture of the plant is rather firm so that specimens retain their shape fairly well in drying, and our photograph of three species of our collection is characteristic, so that they can be recognized by the eye. All are bright red when fresh, but when dried, change their color in time, and have been described as luteus, etc. Cooke's figures in only one instance have any suggestion of the color, and in that instance the coloration is very poor. As I have collected them in the tropics they are the brightest colored fungi one meets there. Many tropical "new species" have been proposed in this section, mostly referable to these three species, teste Seaver, who is no doubt correct. The spores are hyaline, ellipsoid or fusiform, and under high power are said to be faintly striate. This feature, however, seems to me to have been exaggerated. All species grow on branches and rotten wood. We consider the three species below which are represented in our museum.

Fig. 1413.

TRICHOSCYPHA INSITITIA (Fig. 1413 middle).—Cups shaped like a little wine glass, stalked, bright red when fresh, with a fringe of pleurocellular hairs. Stalk slender, 2 cm. long. Spores fusiform, 12 x 42, with acute ends. This appears to be an Eastern species only. I have it from Professor Yasuda, Japan, and collected it in Samoa. As to size, shape and color it is the same as our common Sarcoscypha floccosa, but differs in hairs and particularly in spores.

TRICHOSCYPHA HINDSII (Fig. 1413 right).—Cups 1 to 2 cm. across with stem varying from ½ to 2 cm. Margin (only) of the cup ciliate. Spores 16 x 28–32, more obtuse than the preceding species. A widely spread species throughout the tropical world and the most common one of the section. It is readily distinguished from the others by the absence of hairs on the outer surface. We have

specimens from Dr. Bernard, Java; Wm. Cradwick, Jamaica; John Gossweiler, Africa; M. Hariot, Cuba, and we collected it in Samoa.

TRICHOSCYPHA TRICHOLOMA (Fig. 1413 left, also Fig. 1414 enlarged).—Cups about a cm. across on a slender, even stem 2–3 cm. The margin of the cup is strongly ciliate, and the outer surface and sometimes the upper stem has scattered, spreading hairs. Spores are 16 x 32, rather acute at both ends. It appears to occur only in the American tropics. Specimens, Jamaica, A. H. Ritchie; Brazil, Rev. Torrend. We take the species in the sense of Seaver's article, although we doubt if historically correct, for the original description and figure calls for a plant "rugulose-venose" externally. However, it is the same as named by Berkeley and fine specimens distributed from Cuba, by Wright.

Fig. 1414.

TRAMETES HETEROMORPHA, FROM PROFESSOR A. YASUDA, JAPAN (Fig. 1415).—It is a question whether to call this Trametes or Polystictus, for the pileus when developed is rather thin

Fig. 1415.

and it has been called both. Originally it was called Lenzites heteromorpha, but I have never seen a Lenzites form. I first saw it in the Museum at Upsala where there is one abundant collection. Then Mr. Romell gave me a nice specimen (Fig. 1416), which he collected on Abies. It is rare in Europe, and in southern Europe where it is mostly resupinate it has in recent years been named Trametes subsinuosa. It is rare in this country, but Mr. Weir finds it abundantly out west on pine, and Frank H. Ames collected nice specimens near Brooklyn. Murrill named it Polystictus hexagoniformis, and the

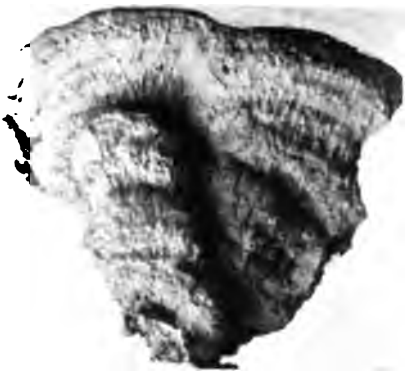


Fig. 1416.

Fig. 1417.

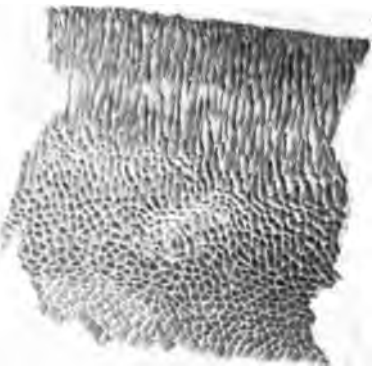


Fig. 1418.

Fig. 1419.
Trametes heteromorpha.

plant published as Trametes lacerata (Myc. Notes, page 604). is doubtless the same thing, with erroneous spore measurements. Trametes heteromorpha is a pure white plant not discoloring much in drying. The pileus when developed is rather thin, but rigid and with a glabrous surface. The pores are large, irregular, more or less elongated, but I never saw them lenzitoid. The spores are cylindrical, about 4 x 10. We present figures: Fig. 1416, the Swedish plant from Mr. Romell; Figs. 1417 and 1419, the Western plant from Mr. Weir; Fig. 1418, the Japanese plant from K. Miyabe, and Fig. 1415, from A. Yasuda.

TRAMETES SEPIUM (Fig. 1420).—Our common plant on frondose wood, known to us so long under this name, is, I believe, practically the same plant as Trametes heteromorpha. Or rather it

Fig. 1420.

is the frondose wood form of it with smaller, more regular pores, but no real difference. Though so common with us it is curiously a very rare plant in Europe. I collected it once in Sweden on oak and noted at the time that it was surely our plant, although Trametes sepium was not at the time supposed to grow in Europe. It has developed since that Bresadola refers the European plant to Trametes albida, named and figured by Fries as Lenzites albida. Our plant, usually resupinate, sometimes has a narrow, reflexed pileus, but never anything like Fries' figure. In France they take a very different plant for Lenzites albida. Fries' figure of Lenzites albida appears to me to be closer (excepting the host) to Trametes heteromorpha than to Trametes sepium. Trametes sepium is a pure white plant, discoloring with age, with round, rigid, usually regular pores, usually largely resupinate with narrow reflexed, glabrous pileus. Spores are 4 x 8–10, cylindrical, straight. It is common with us and prefers oak.

Fig. 1421.

TRAMETES MINIMA (Fig. 1421).—This is a little form of Trametes sepium, so common and constant on oak paling fences that it deserves a name, although,

of course, it is only depauperate. A specimen is found at Paris, named Trametes minima by Berkeley, but never published.

TRAMETES SERPENS, FROM PROFESSOR A. YASUDA, JAPAN.—This is a rare plant in Sweden, and is so recorded by Fries. We never collected it in Sweden, and do not know it from the northern United States. Its identity is well established, however, for Berkeley called it Trametes Stephensii, and his specimens were cited by Fries and are still in his herbarium. In the north, where it was named, as far as we have seen specimens, it forms little patches (Fig. 1422),

Fig. 1422. Fig. 1423.

but its home is really the South and in Florida and in Brazil it is abundant and spreads over the host in wide extent (Fig. 1424).

Fig. 1424.

For many years we could not feel that the southern plant was the same, but now that we have gotten spores from the northern plant and find that the two plants are the same in every respect, excepting the general size, we can not longer maintain them as distinct. The features of Trametes serpens are the rigid white texture and pores, and the large, cylindrical spores, hyaline, smooth and measure 7–8 x 12–16. The pores are usually large, but a small pored form (Fig. 1423) occurs in Japan, and we have it also from Florida. Excepting pore size it is the same in all respects. Trametes Stephensii, as named from England by Berkeley, and Trametes Epilobii, as named by Karsten from Finland, are for me both synonyms. The latter forms very small patches on Epilobium stems in Finland, but has never been collected in Sweden, as far as I know.

TREMELLA CANDIDA, FROM PROFESSOR A. YASUDA, JAPAN (Fig. 1425).—Pileus pure white, applanate, effused, developing foliaceous lobes. Basidia globose cruciate, 16–18 mic. Spores subglobose, 7–8 mic.

In all characters, excepting its general shape, this is the same as Tremella fuciformis (page 790, Fig. 1188), but a comparison of the figures will readily show the difference. Excepting as to spores it appears the same as Exidia candida (page 620, Fig. 881).

Foreign tremellaceous plants are so little known that we trust our correspondents will not fail to collect and dry every specimen they note. If they dry up apparently to nothing, do not hesitate on that account to send them in, for a little soaking will bring them back as good as when collected. But do not mash them flat on paper and dry them. If they dry flat, that is all right, they will come back, but if mashed flat they will not come back. Also it is never worth while to send them in formalin. Simply dry tremellaceous plants, and we can work with them to as good advantage as if we collected them ourselves.

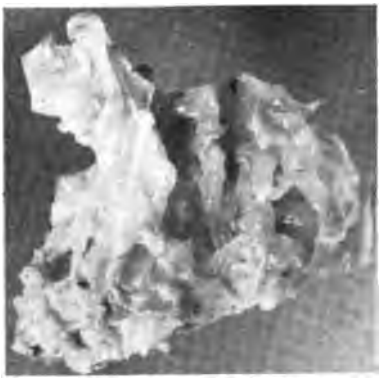


Fig. 1425.

Fig. 1426.

IRPEX CAESPITOSUS, FROM V. DEMANGE, COCHIN, CHINA (Fig. 1426).—Not at Kew, where one would expect to find Berkeley's specimen, but at Paris is a collection labeled "Irpex caespitosa, Berk." I have no notes on it or its source, but from the photograph I take it to be the same as Mr. Demange sends. If not, no particular harm is done for the name is a good one for the plant. Growing densely caespitose and confluent, apparently on rotten wood. The pilei are soft, fleshy, pure white and irregular in form. As received it is difficult to separate them from each other. The teeth are rather slender and the plant might be classed as a Hydnum. They are irregular though, and confluent, and I think a better Irpex. They are darker than the pileus, probably discolored in drying. Cystidia none. Spores subglobose, 3–4 mic., hyaline, smooth. I do not know any similar species. There is a possibility that it is Hydnum cucullatum, named from Japan, but it is not conchiform nor pendulose, nor does it seem to be the same as my photograph of the type.

LENZITES BETULINA, FROM G. H. CAVE, INDIA (Fig. 1427).—We illustrate two of the same collection from Mr. Cave, not because Lenzites betulina is any rarity, but to show how an old reliable species like this will vary. It grows in abundance in Europe and with us and we get it from many countries, and usually it is just the same with perfectly distinct gills. We felt like awarding it a

medal because it was so uniform and did not vary as its polymorphic brother Lenzites flavida of which no two specimens are ever alike. But along comes this collection from Mr. Cave and puts an end to this belief which we have so long cherished.

Fig. 1427.

It is quite evident that Lenzites guineensis (Fig. 890, page 627), is this same form of Lenzites betulina as in Fig. 1427 on the right.

CATASTOMA LEVISPORA, FROM D. L. CRAWFORD, CALIFORNIA.—Peridium globose, 2½ to 3 cm. cartilaginous, firm, dark purplish. Sterile base none. Gleba dark purplish brown. Capillitium of short separate threads, pale colored, 6 to 8 mic. thick. Spores globose, even, 4–5 mic. strongly apiculate, or rather with a short pedicel 2 mic. long.

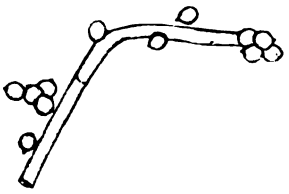


Fig. 1428.

As to peridium this is similar to Catastoma pedicellatum and Catastoma Pila. As to spores there is but one other species with smooth spores, viz., Catastoma Brandegei, which is a much smaller plant and has olive gleba.

The type is only a piece received from D. L. Crawford, California, and collected by Lois M. Clancy, on ground in a vacant lot.

TRAMETES TRUNCATOSPORA, FROM PROFESSOR A. YASUDA, JAPAN (Fig. 1429).—Subresupinate with ill defined pileus (in these specimens). Context and pore tissue isabelline. Pores smooth with white mouths. Spores abundant, smooth, hyaline, 5 x 7, truncate at the base.

Fig. 1429.

In a work on Philippine polypores, as yet unpublished, there is a species (Trametes truncata) with these same peculiar spores, but no resemblance otherwise. They are Ganoderma spores, but hyaline, similar but much smaller than the

spores of the common Polyporus ochroleucus and Fomes Ohiensis. Excepting spores, this is very close to Trametes Japonica (Note 751), which has spores entirely different, elliptical, about 3 x 5.

ISARIA MOKANSHAWII, FROM PROFESSOR N. GIST GEE, CHINA (Fig. 1430).—There is very little utility in naming species of Isaria, excepting as a convenience to the Museum. They afford but few characters, excepting the host, and should rightfully be named for the host, which in this instance we do not know. Our photograph represents all we can tell about the species. The real interest in Isarias is in their correlation with the Cordyceps form. As Cordyceps are collected it will be of value to have the Isaria on record. We do not know any Cordyceps that occurs on this host, but of course the fungi of China have practically not been collected at all. There is no more fascinating work than the fungi of insects, and we ask every correspondent who sees one, whether he be an entomologist or a mycologist, to carefully collect it with the host attached, dry it and send it in.

Fig. 1430.

Fig. 1431.—Polyporus rugosissimus.

POLYPORUS (AMAURODERMUS) RUGOSISSIMUS, FROM T. HUNTER, WEST AFRICA (Fig. 1431).—The only specimen of this that has previously reached us was from Henri Perrier de la Bathie, Madagascar, which was named and figured in Letter 48. That specimen was mesopodial. This as shown (Fig. 1431), is pleuropodial. As a general thing we hold that stipe insertion is a good specific character, but we would not base a species on that alone. This specimen has abundant spores, globose, pale colored, 10–12 mic., smooth. It belongs to the very characteristic and rare section, Amaurodermus, which occurs only in the tropics, but many specimens and species have accumulated in our museum.

ISARIA RITCHIEI, FROM A. H. RITCHIE, JAMAICA (Fig. 1432).—Isarias should not be named, excepting as a convenience in the Museum, for they are all preliminary stages of Cordyceps and should bear the name of the Cordyceps. However, as in this case, the corellation with the Cordyceps is known for but very few forms. These are nice specimens of Isaria that Mr. Ritchie sends, and I am sure no Cordyceps has been collected on the same host, a small Melolonthae. We have with us a Cordyceps Melolonthae, but on a large grub, and a large Cordyceps evidently not derived from this Isaria. I hope that Mr. Ritchie may succeed in finding the Cordyceps that surely grows on this grub. As I did not know it, I sent it to Professor Thaxter, who has made more collections of Isarias and Cordyceps than any other man, and is really the only one who knows them. He advises me this is new to him. Professor Thaxter has never published on the subject, but we expect him to do so in time and certainly hope that he will.

Fig. 1432.

POLYSTICTUS CROCATIFORMIS (Fig. 1433).—This plant really belongs to the gilvus alliance, having abundant setae and same

Fig. 1433.

color context. It is a peculiar species, collected by Mr. Murrill on his trip to Mexico. It is closely related in fact to Polystictus per-

tusus (Cfr. Myc. Notes, page 827), but differs from all related species in its large, daedaloid pores. It has a soft, spongy surface and should be cross indexed in Section 115 with Polystictus byrsinus. We would enter it in Section 120 by the side of Polystictus cichoraceus, though the surface is of an entirely different nature. It is only known from Mr. Murrill's collection.

TRAMETES EPITEPHRA, FROM DR. J. BURTON CLELAND, NEW SOUTH WALES.—This is the first time I have gotten this and the second collection known, the other being the type at Kew (Fig. 1434), which accords exactly with Dr. Cleland's specimen. The features of the species are its diminutive size, white context, reflexed, narrow, glabrous pileus with dark surface and very large, white pores. Nothing similar is known in Europe or elsewhere excepting a plant we have in this country, called Trametes variiformis, which is very close and probably the same. We believe we do not find the true spores of the plant which from analogy to related species of Trametes such as serpens, serialis, sepium, should be cylindrical. The spores we see which are globose and of various sizes are no doubt conidial.

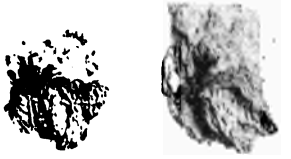


Fig. 1434.

CYPHELLA FUSCO-DISCA, FROM OTTO A. REINKING, PHILIPPINES (Figs. 1435 and 1436).—Determined by Professor Burt. On receipt of this little plant we determined it as Cyphella mellea, determining it from Burt's paper, but we forwarded the specimen to Professor Burt and he determined it as above. The little Cyphellas are so rare and so rarely collected that we have never done any work with them. We shall be glad of material from any one who notes these little plants.

Fig. 1435.

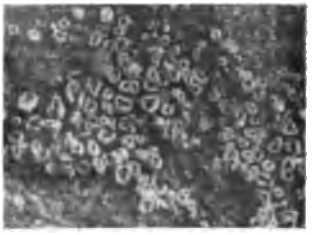


Fig. 1436.

Cyphella fusco-disca consists of little sessile, isabelline colored cups (Fig. 1436 enlarged sixfold), growing on decorticate wood. Under the microscope the prominent feature is the marginal colored encrusted hairs. The spores are 5 x 6–8 hyaline, smooth. We see no application of the name to it. Our figure 1435 is natural size, figure 1436 soaked out and enlarged six-fold.

CORDYCEPS LLOYDII, FROM PROFESSOR W. GOWDEY, UGANDA, AFRICA (Fig. 1437, enlarged).—The material is too scanty to examine, but we judge is the same as named (1886) by Faw-

cett, as above, and found on an ant in Guiana. The fungus is a very minute, white club with a small capitate head and seems to agree very well with the original figure. Mr. Gowdey is the government entomologist at Kampala, Uganda, and he informs me the ant is Paltothryeus tarsatus. The specimen is so small it is difficult to photograph it, but the little clubs (enlarged sixfold) can be noted on

Fig. 1437.

the host. It is the little white club extending below the insect about the middle. Do not mistake the club-shaped appendix on the head for the Cordyceps. Without examination, and I do not wish to destroy the scanty material I have, it is not sure that it is a Cordyceps. I hope Mr. Gowdey will send additional material. I do not know the Mr. Lloyd for whom this was named, and I presume he is dead.

POLYPORUS MURRILLII (Fig. 1438).—Pileus with a lateral, short stem. Surface soft, dull, concolorous with the context, no cuticle. Context fleshy, isabelline, ½ cm. thick, drying hard. Pores minute, 1–2 mm. long, darker than the context. Spores small, globose, 2–2½ mic., hyaline.

Fig. 1438.

With Mr. Murrill's consent we brought home a specimen (Fig. 1438) of this plant. It was collected in British Honduras by M. E. Peck and an abundant collection is in the New York Museum. It was referred to Polyporus Vera-Crucis, named by Cooke from Mexico, but this species has different texture, color and spores and does not belong in the same section (Cfr. Stipitate Polyporoids, page 166). Polyporus Murrillii is the second species I found in New York to be added to Section 12 of the pamphlet. The other, Polyporus praeguttulatus, is from Jamaica.

HETEROCHAETE GELATINOSA (Fig. 1439).—The only collection known to us is the original from Cuba, named by Berkeley

Fig. 1439.

as Kneiffia. We found a fine specimen in the Peter's Herbarium, from which we get a clear idea of its structure. It is resupinate, of a membranaceous, gelatinous texture, but does not soak up very soft. The imbedded, globose, cruciate basidia are quite evident, but spores we did not find. The granules, which densely cover the surface, and give the plant a pruinose appearance to the eye, are sterile. They are mostly obtuse, irregular in shape and appear to be borne on the surface and of different texture from the substance of the plant. The genus is not analagous to Kneiffia (in sense of Berkeley), but close to Exidia. Indeed I do not know what the technical difference is, except the plant is not as soft-gelatinous as Exidia and is very different in appearance.

PSEUDOHYDNUM GUEPINOIDES, FROM REV. RICK, BRAZIL (Fig. 1440).—The questions that arise in the modern classification of fungi were not known in the old Friesian days. Fries divided them in a general way into those with gelatinous and non-gelatinous tissue. But now plants are known that have tissue which is partly gelatinous and partly non-gelatinous and it is a question where to place them. Such is this plant. The substance of the pileus is soft, gelatinous, but the teeth are of an entirely different texture. Rev. Rick gave a good description and has proposed for it the name Pseudohydnum guepinoides, and we think the classification is good. There is a similar plant, Tremellodon gelatinosum, which is entirely gelatinous, both pileus and teeth and it has an entirely different type of basidia and spores, and it is a true tremellaceous plant in all its affinities.

Fig. 1440.

Pseudohydnum guepinoides as to teeth, basidia and spores is a Hydnum, only differing from other Hydnums in having gelatinous pileus. The spores are hyaline, globose, 4–5 mic. strongly tubercular. Our illustration shows the shape and usual size of the plant. It is frequent in the American tropics, not known elsewhere, and has been represented in the museums of Europe for many years. Rev. Rick was not the first to name it, but we use

his name as the only one of merit. Léveillé found a specimen in the museum at Paris from French Guiana and named it (1844) Hydnum Thelephorum, hence for the Kuntzeites the name becomes Pseudohydnum Thelephorum (Lev.), McGinty. Ten years later Montagne called it (specimens from same region) Thelephora padinaeformis, and the same year Berkeley published it under Schweinitz's mss. name, Phlebia tremelloides, from specimen still preserved at Kew from Surinam. As according to our view it is neither a Hydnum, a Thelephora or a Phlebia, we adopt Rev. Rick's name.

FOMES GIBBOSUS, FROM REV. RICK, BRAZIL (Fig. 1441).—Those who collect the common Fomes applanatus, with us a large, sessile plant one or two inches thick and a foot across, would probably object to referring this little, tropical, stalked plant to the same species, but to my mind they are the same. Years ago Nees gave a figure of it from Java, under the name Polyporus gibbosus, and we use the name as a convenience. The branching of the stem figured is unusual. Ordinarily this tropical form has a simple stem, when it has a stem at all. It usually occurs in the tropics as a large, thick, sessile plant, the same as with us. While we have used the stipe as the primary basis for division of the polypores its value is only relative. With most species the presence or absence of stipe is a constant character, and a good one to use in classification. But Fomes applanatus, which in temperate regions is a large sessile plant, has a small form in the tropics, with a tendency to develop a stipe. Then it is called Fomes gibbosus, but for me in reality it is the same plant.

Fig. 1441.

POLYPORUS SUADERIS, FROM L. RODWAY, TASMANIA (Fig. 1442).—This laid on my table several days and I was puzzled how to consider it. Finally I concluded it was the analogue of our common Polyporus fuscus. The general appearance, reflexed pileus with raised zones, is quite different, but the color of both surface and context are the same. The context is of the same general nature, but is harder and the hyphae are more ligneous. The spores, 4 x 8, are thicker. It is a curious fact that our common

Polyporus fuscus rarely reaches me in its typical form from any foreign country and is not known from Australasia.

Fig. 1442.
Polyporus suaderis.

LENZITES STYRACINA, FROM PROFESSOR A. YASUDA, JAPAN (Fig. 1443).—This was named from Japan as Daedalea, but

Fig. 1443.

as shown by the photograph, is a Lenzites as was the type. It is a very distinct species and known only from Japan. It develops a narrow, reflexed pileus which is brown on the surface, but the context and gills are pale greyish. The gills are rigid and distant. While this is a nice collection in prime condition I did not find any spores.

MYCOLOGICAL NOTES.

BY C. G. LLOYD.

No. 60.

CINCINNATI, O. AUGUST, 1919.

CHARLES E. FAIRMAN

MYCOLOGICAL NOTES

Issued by C. G. LLOYD.

224 West Court Street, - - CINCINNATI, OHIO.

SUBSCRIPTION PRICE.—A little personal interest on the part of the recipient in picking up and sending to my address, specimens of the larger fungi. All are desired excepting specimens of fleshy Agarics. Simply dry the specimens and send them in.

DR. CHARLES E. FAIRMAN

Residing in a little village, Lyndonville, N. Y., is a quiet, unassuming man who has accomplished a wonderful amount of work in the line of mycology. He is not extensively known to American mycologists in general, for he has done relatively little publishing. And yet he has been a collector of local mycological flora for years, and has accumulated an extensive and valuable set of local fungi and exsiccatae. Dr. Fairman is one of our old-time mycologists, his specimens contributed to Ellis' exsiccatae evidencing his early interest in the subject. He is a practicing physician and has spent his life principally in Lyndonville, having been born there, and having lived the greater part of the time in the village.

Dr. Fairman specialized on the Sphaeriaceous fungi, and is now engaged in writing up sections of this group for North American Flora. His interest in mycology is purely avocational—he pursues the study solely for his own pleasure and recreation, and, be it said, such men make exceptional contributions. I know nothing of the great world of small Sphaeriaceae, but I was told by one working along this line, that Dr. Fairman has probably the best critical knowledge of this difficult group of any one in our country.

THE AGARICACEAE OF MICHIGAN

We failed to state, as we did not know it at the time, that the price of this work is four dollars, and that the book may be obtained from R. C. Allen, Lansing, Mich. As this is the only comprehensive book so far published on our Agarics that covers the subject or is of much practical value, we anticipate that the supply will soon be exhausted. A better manual could not be written, though, no doubt, the future will bring out piratical authors who will steal the matter from the book and juggle the names, which is the usual method adopted when an "authority" attempts to hide his rascality. Just as Berkeley's original account of English fungi was followed by several works, copied from him mainly, so in this country Kauffman's book will be the basis from which future cribbers will draw their chief source of supply.

THE GENUS PTERULA

This is rather a rare genus both in Europe and the United States. Fries originally founded the genus on a specimen from Guepin, France, in 1830, and gave a good illustration in Linnaea. Afterwards his son collected another species in the Botanical Garden at Upsala, and Mr. Romell has also collected it at Stockholm. Léveillé attempted to substitute a Persoonian name, Merisma, for Pterula, but as he did not take the name in the sense of Persoon it naturally was not much of a success as a substitute. The genus consists of plants of the general type of Clavaria, but of a firm, subcoriaceous texture and more rigid. They are glabrous, thus differing from Lachnocladium. We would restrict both Pterula and Lachnocladium to the species with hyaline or very pale spores.

In Europe there are only two species known, viz.: Pterula subulata and Pterula multifida.

PTERULA SUBULATA (Fig. 1463).—This is the original species of the genus, and reached Fries from Guepin, Angers, France, and was published and figured in Linnaea, 1830. It is characterized by its strict, erect habits and few branches. It does not seem to occur in northern Europe, but is recorded a number of times from France. It is unknown to me excepting from the original (Fig. 1463) in the museum at Upsala.

Fig. 1463.

Fig. 1464.

PTERULA MULTIFIDA (Figs. 1464 and 1465).—This occurs in Sweden, but is rare there. Fries' son found it in the Botanical Garden at Upsala (Fig. 1464) and Romell has collected it (Fig. 1465) in a park at Stockholm. At first view it would seem that Romell's plant is not the same, but the difference is due to Romell's having been pressed in drying. Our photographs present all the features of the species. It will be noted that it is much more slender and rigid than a Clavaria. These two collections are all that are known to me.

PTERULA DICHOTOMA.—In addition, seventy-five years ago Sauter claimed to have found a species on fallen wood, Pterula dichotoma. I have seen no specimens or record since, and if it ever existed it is practically lost now.

We have in the United States only three well authenticated species, only one of which is frequent, viz.:

PTERULA PENICELLATA (Figs. 1466 and 1467).—The only fairly frequent species we have in the United States is the above and that has no established name. We find it not rarely around Cincinnati where Morgan also collected it and misreferred it to

Pterula densissima. Dr. Whetstone, Minneapolis, has sent it to us many times and Ravenel distributed it (No. 2, 44) as Pterula subulata. The name adopted above is a mss. name, as Berekley named a Ravenel collection at Kew. He does not mention it at all in his

Fig. 1465 Fig. 1466.

Fig. 1467.

resume of N. A. Fungi. I have vacillated for a long time trying to decide whether to consider it the same as the European Pterula multifida or not. A close comparison of figures 1464 and 1466, photographs of the European and American species, will show a decided difference. Our American species is not so strict, more spreading and the branches more slender. Our photograph (1467) of the fresh plant appears very different from the dried plant (1466), but it is the same collection. All Pterulas, no doubt, shrivel and change much in drying. It must not be confused with Clavaria penicellata as illustrated by Bulliard, and which was once suggested as a Pterula by Fries. No one has ever seen a specimen to correspond with Bulliard's figure since it was published, and it has dropped out of current European mycology.

Fig. 1468

Fig. 1469.

Fig. 1470.

PTERULA PLUMOSA (Fig. 1468).—If this is different from Pterula multifida it is the difference shown in our photographs. It

appears to be a smaller plant with more divaricate branches. It was called Pterula divaricata by Peck. It is rare, the only specimen noted by me being in Schweinitz's and Peck's collections.

PTERULA DENSISSIMA (Fig. 1469).—Apparently this is our rarest species, only known to me from the one specimen at Kew that we present. It was collected in Massachusetts by Sprague many years ago. It is well named from its compact habits, and if Berkeley had figured it there could never have been any confusion. Morgan, however, misreferred here Pterula penicellata and the record of Peck was based on Tremellodendron merismatoides. It appears in error in Frost's list as Pterula durissima.

PTERULA SETOSA, described by Peck as growing on old Polyporus elegans, is composed of little sub-simple clubs about a quarter of an inch high, clothed above with "diverging hairlike filaments," hence compiled as Lachnocladium setosa in Saccardo. It is unknown to me, but is evidently anomalous in either genus.

Two species named as Clavaria by Schweinitz were referred by Léveillé to Pterula, viz., Clavaria merismatoides and Clavaria tenax. He was only guessing, however, and guessed both wrong, as neither is a Pterula, but they so pass in Saccardo. From tropical countries about forty so-called species have been named, and we have photographs of all the types we have noted. We present the most characteristic, for photographs show about all that can be told about them and much more than has been told about most of them in the past.

PTERULA FASCICULARIS (Fig. 1470).—This was based on a Samoan collection and is the only species we know growing in this manner, fasciculate from a common base. Spores globose, 8–10. It appears to me the same as A. & S. named Mucronella fascicularis, although I know nothing of the European plant, excepting the figure given about a hundred years ago.

PTERULA PENNATA (Fig. 1471).—This appears to me well named by Hennings from the peculiar branching, likened to a feather. It came from Brazil. The spores are said to be 7–8 x 10–13. Mon-

Fig. 1471.

Fig. 1472

tagne had, years before, named it Hydnum Sprucei, but it never was a Hydnum, and Montagne should have known it. It will become Pterula Sprucei (Mont.) McGinty for the Kuntzeites.

PTERULA PUNGENS (Fig. 1472).—We do not know this in the original sense of Léveillé, and take it as determined by Hennings. which may and may not be true. It agrees with the description, and Pterula togoensis as named by Hennings from Africa is for me the same thing.

PTERULA SIMPLEX (Fig. 1473).—This was named and well illustrated by Paoletti from Malay. In size and shape it is much like the common little Calocera cornea, but of different texture and color. Hennings named three species, similar to the eye, viz.: Pterula Winkleriana from Africa (sp. 5–7) Pterula importata, exotic (sp. 8 x 12–14). Pterula sub-simplex (mss. ?), Brazil, and Pterula sub-aquatica, Africa (sp. 6 x 12–13), from description is very close, if not the same.

Fig. 1473

Fig. 1474.

Fig. 1475

PTERULA TAXIFORMIS (Fig. 1474).—This was originally named from South America by Montagne as Pterula, but when compiled in Saccardo was called Lachnocladium taxiforme, evidently from the term "pilis fasciculatis" of the original description. But I believe the plant is an evident Pterula as referred by Patouillard. It is quite close to our Pterula setosa, but different in branching as shown in our figures. I believe that Pterula tenuissima of Léveillé and Pterula humilis of Spegazzini are not much, if any, different.

Fig 1476

Fig. 1477.

PTERULA EXSERTA (Fig. 1475 and Fig. 1476, enlarged).—At Berlin I photographed a unique little Pterula that Hennings had mis-

referred to Pterula plumosa. I kept no note of its source and do not find where Hennings published it, though it is probably what he published as Pterula subplumosa from Uhl, Brazil, and forgot to change the label. Of course, it has no suggestion even of Pterula plumosa, but Hennings did not know that. It is so characteristic that it will be readily recognized from our photograph if found again.

PTERULA CAPILLARIS, FROM OTTO A. REINKING, PHILIPPINES (Fig. 1477).—At Kew is a specimen from Africa so named by Cotton. I hardly think it agrees with Léveillé's description from Java of which I have noted no specimens. The name is quite appropriate in the sense of Cotton at least, and I think it would be well to adopt it for this plant. Léveillé described it as "espèce capillaire comme Pterula Commersonii," but Pterula Commersonii, (Fig. 1482) is not "capillaire," at least in the sense of this plant. In the collection from the Philippines that we refer here the spores are inequilateral, elliptical, 5 x 10, hyaline, with rather more acute ends than a truly elliptical spore.

PTERULA FRUTICUM, FROM JOHN GOSSWEILER, WEST AFRICA (Fig. 1478).—Stem simple, dark brown. Spores 3 x 4–5, subhyaline, smooth. It grows on a fruit of some kind and Mr. Gossweiler sent me a liberal collection, every one on this same fruit. An abundant violet coloring matter is given off in an alkaline solution.

PTERULA MANNII, FROM JOHN GOSSWEILER, WEST AFRICA (Fig. 1194 on page 793).—The specimens branch in a peculiar manner at the top and the slender stem is somewhat blackened at the base. The spores are hyaline, 4 x 6, smooth. The branches seem scurfy under the microscope, but there are no hairs.

PTERULA HIMALAYENSIS from India at Kew is similar as to photograph, but is recorded as having globose spores. It was published as Lachnocladium himalayense.

Fig. 1478.

Fig. 1479.

PTERULA ULEANA (Fig. 1479).—Caespitose, reddish brown. Spores subglobose, 3½–4 x 4–4½, growing on bark, collected by

Ule in Brazil. The statement of the author that it was "gewisse Aehnlichkeit" with Pterula setosa was a very bad guess, and only demonstrates what little Hennings knew of Pterula setosa.

PTERULA BRESADOLEANA (Fig. 1480) is a large (2–3 inches) densely branched and intricate species named by Hennings from Central Africa. Color is reddish brown or subalutaceous and spores are recorded subglobose, 4–5, hyaline. Our figure represents only about a quarter of the specimen. He named the plant for Bresadola, but I know not any connection he had with it.

Fig. 1480

Fig. 1481.

Fig. 1482.

PTERULA ACICULAEFORMIS, FROM OTTO A. REINKING, PHILIPPINES (Fig. 1481).—Simple, slender, rigid. Color, dark brown. Spores not surely seen, but if correct, globose, 4–5 mic., hyaline. This is much like Pterula fruticum from Africa, but a larger species, and does not develop the purplish coloring matter in alkali so characteristic of the latter. The dried specimens are very rigid and tough. They look like slender pine needles, excepting as to color. It grew on wood.

PTERULA COMMERSONII (Fig. 1482).—As to the photograph this is very similar to Pterula trachodes. The branches are more spreading. It came from Mauritius and the collector (Commerson) describes the stem as white, the branches yellowish. It was named by Léveillé as Thelephora Commersonii as it appears in Saccardo, but it has nothing in common with Thelephora as known today.

PTERULA TROPICA (Fig. 1483).—There should be no difficulty in recognizing this species from the photograph and Montagne's statement that it was deep yellow, grew in the ground and had white spores. It came from South America. It seems quite rigid and branches in a peculiar dichotomous manner. It is not known, I believe, except from the type.

Fig. 1483.

Fig. 1484.

Fig. 1485.

PTERULA TRACHODES (Fig. 1484).—Rigid, much branched, pale yellow, growing from the ground. This was named by Berkeley from Spruce collection, Brazil, as Thelephora trachodes as it appears in Saccardo. It is an evident Pterula. Pterula aurantiaca from Ule, Brazil, said to have subglobose spores, 5–6, is the same species or very close.

PTERULA ACTINAEFORMIS (Fig. 1485) is a compact species, the stems confluent at the base. It is somewhat similar to Pterula densissima, figured on page 864. It is known from but one collection from Spruce, Brazil. Berkeley named it Thelephora actinaeformis as found in Saccardo. It has no relation to Thelephora today.

The preceding species are all I found in the museums, or at least all that I photographed, and I photographed all I noted. There are, no doubt, other species classed in other genera, as Clavaria, which I did not work over in detail. Besides, I think that many plants that pass as Lachnocladium are Pterula. The following of which I believe no specimens are available to us, we can only guess at, and that is all anyone can do.

Pterula angustata, Mexico, Léveillé. Not described so one can even guess as to its characters.

Pterula arbuscula, Brazil, Bresadola. From description, close if not Pterula tropica. Spores luteolar, 7 x 10–12.

Pterula dendroidea, Java, Junghuhn, published with a good figure as Clavaria. Compiled in Saccardo as Pterula. The stem is pubescent, and if it belongs to the Clavariaceae it is a Lachnocladium. The type at Leiden appears "horny," as if it were gelatinous when soaked. When its basidia are known it may be found to be a Calocera.

Pterula divaricata, Léveillé lists this as "—Clavaria divaricata, Berk." It does not appear published under that name, and I have noted no specimens.

Pterula Guadelupensis, Guadeloupe, Léveillé. Pterula tropica as a guess. Teste Patouillard it is a Dendrocladium. Not found by me.

Pterula incarnata, South America, Patouillard. A very small species ½ cm. tall, growing on fallen twigs.

Pterula laxa, Guadeloupe, Patouillard. Plants solitary, sub-simple, 5–8 mm. high, on twigs. Spores not found. Compared to Pterula simplex, excepting its solitary habits of growth.

Pterula nana, Guadeloupe, Patouillard. A very minute plant, 1–1½ mm. high, growing fasciculate on twigs, reddish when dry. Spores 5–6 x 7–10. Seems to have habits of a Mucronella.

Pterula nivea, Guadeloupe, Patouillard. From the description I do not catch the difference between it and Pterula fascicularis.

Pterula pallescens, Africa, Bresadola. First referred to Pterula, then to Lachnocladium by the author. And then called Pterula pallens by same author. We have Philippine specimens so determined, but they do not appear to us to fit the description.

Pterula pusio, New Zealand, Berkeley. (as Clavaria) Said by Bresadola to be a Pterula, but I do not know how we could infer anything whatever from Berkeley's short "description." The Philippine specimens so referred are doubtful to me from the New Zealand description.

Pterula squarrosa, South America, Hennings. Not seen by me, but from description I judge it is Pterula Mannii.

Pterula sub plumosa, South America, Hennings. Not found by me under this name, but I presume it is Pterula exserta of this pamphlet, and that Hennings failed to change his label. He records spores as globose, 3½ mic.

Pterula secundiramea, South America, Spegazzini (? of Léveillé as Clavaria). Seems from description to be Pterula Commersonii.

Pterula tahitensis, Tahiti, Reichardt. From description not a Pterula and probably is Lachnocladium dendroideum.

Pterula timorensis, Pac. Island, Torrend. From description and figure seems to be Pterula capillaris of this pamphlet.

Pterula Vanderysti, Africa, Hennings. Not found by me, but from description seems to be Pterula fascicularis of this pamphlet. The spore record is globose,

THE GENUS DENDROCLADIUM

There occurs in the tropics a group of Clavariaceae corresponding to Pterula and Lachnocladium, but having colored spores. It was called Lachnocladium by Patouillard, but for me that is a perversion of the name both as to meaning and application and does not include the original species on which it was based. It includes Phaeopterula of Hennings. As a usual thing I hardly uphold separating genera on spore color alone in the small groups, but some of these plants are so different from Pterula and Lachnocladium in general features that there should be a genus to include them leaving out of consideration the spores. We adopt a name proposed by Patouillard as a section. The following Pterula of Saccardo enter into this group.

Pterula hirsuta, Java. Not found by me. Spores recorded as elliptical, 4 x 6–8, probably smooth.

Phaeopterula jurnensis belongs here and also the most of the species included in Patouillard's synopsis as Lachnocladium.

TREMELLACEOUS PLANTS

It is specially desired that those who collect fungi should gather every tremellaceous plant they note. For some reason collectors do not usually send in Tremellas. They dry so poorly that the impression seems to be that it is not worth while drying them. But there is no class of specimens that makes better plants to work with than those of tremellaceous nature. A few minutes' soaking brings them back to the same condition as when collected. They may shrink to almost nothing in drying, but they are good specimens, nevertheless. We hope that out friends will watch out for Tremellas, especially the small species, for I am sure there are many that we know nothing about.

TREMELLA VESICARIA, FROM REV. MARCUS KREKE, CINCINNATI, OHIO (Fig. 1486).—What fine specimens dried tremellaceous plants make! One can hardly believe that our photograph has been made from a plant that had been dried and had shriveled out of all shape. Tremella vesicaria is well established in our American traditions, but, no doubt, the attempt to change will some day be made for it is a question if it grows in Europe where the name originated. I never saw a specimen from Europe. Certainly it is not Bulliard's figure, usually cited, though no one knows on what that was based. I have no doubt it is what Schweinitz named Guepinia helvelloidea, though no evidence exists on that point, and it never was a Guepinia. It is Tremella helvelloidea (Schw.), McGinty.

Fig. 1486.

Tremella vesicaria is a rare plant. I never saw it growing, though I have received it several times. It grows from the ground, growing around grass blades and small plants. The basidia are globose, imbedded, and the spores are oblong, curved, 10–12 mic. long, hence might be called Exidia. The more tremellaceous plants I examine the more I am getting confused as to the distinction between Tremella and Exidia. The original idea that Exidia was horizontal, sterile beneath and has papillae, is not carried out by several species, such as recisa and repanda. Then I noted and concluded that the

spores of Exidia were of a cylindrical type while those of Tremella were globose or piriform, but here is a plant that invalidates that conclusion. It is a hollow, white plant, the only hollow Tremella we have in the United States, excepting a little known, pendulose species of the South. Recently I saw in Clinton's herbarium a collection labeled Tremella vesicaria, which may be correct, but I think not. My best thanks are extended to Rev. Kreke for this nice specimen of a rare species.

TREMELLA HISPANICA, FROM C. DE ARANZADI, SPAIN (Fig. 1487).—I do not believe that the white, tremellaceous plants of Europe have ever been critically worked. They seem to call them all Tremella albida. I know four white species in Europe now, quite different plants under the microscope. This species from Spain, as shown in our figure, is more foliaceous than any other white species. It differs from other Tremellas as Tremella samoensis does. The basidia instead of being deeply imbedded in gelatinous tissue with long sterigmata are near the surface. Our figure (1488) shows them young. No spores have formed on the specimens. I referred the plant provisionally (Letter 42) to Clavariopsis on account of the basidia, but I suspect Clavariopsis is better restricted to the original idea, viz., a Tremella shape of a Clavaria. If the plant has been collected before in Europe it was probably referred to "Tremella albida, Hudson," which, however, is an Exidia and has no resemblance to this. Bulliard's figure 386A, citcd by Fries as Tremella albida, has no resemblance to Hudson's plant which shows that Fries had no very definite idea on the subject. This Bulliard figure has a suggestion of Tremella hispanica, but surely is not it, although I think no one knows what the figure is.

Fig. 1488

Fig. 1487.

Fig. 1489.

AURICULARIA ORNATA, FROM OTTO A. REINKING, PHILIPPINES (Fig. 1489).—While to me it is evidently only a

form or perhaps a condition of Auricularia mesenterica, it was named as above by Persoon from specimens collected in the Island of Mariana and fairly well illustrated. It was not compiled in Saccardo, and has been lost for nearly a hundred years. I think Cooke and Berkeley also have names for it, but have misplaced my notes and photographs. Auricularia mesenterica as a usual thing has a hymenium with convolutions and pits as shown in figure 1490. This plant while the same in texture and otherwise has a flat hymenium drying with a few veins only. At first view they are quite different, but I think in the essentials they are the same. This form, however, is quite rare. I have never gotten it before or seen it, excepting at Kew and only from the East.

AURICULARIA MESENTERICA, FROM JAMES R. WEIR, MONTANA (Fig. 1490).—The distribution of fungi is very uneven, and the causes are hard to explain. Notwithstanding the thousands of so-called species with which the literature is encumbered the species are relatively few and widely distributed. The greater part of the so-called species are due to vague guesses of the namers.

Fig. 1490.

In Europe Auricularia mesenterica is fairly common. I have collected it in France, Switzerland and Sweden, and in the latter country it occurs more frequently than the common Jew's ear. I get it from Australia, the Philippines and the East in general. It reaches me from South America and I found it very abundant in Cuba. But in the United States where I have perhaps a hundred collections of Auricularia auricula-Judae, I have but one collection of Auricularia mesenterica, and this came from Mr. Weir several years ago. There is a tradition in Europe that there are two similar species there, Auricularia mesenterica and Auricularia lobata. In Fries' herbarium I could not see any difference between them, comparing them side by side.

EXIDIA JANUS, FROM REV. C. TORREND, BRAZIL (Figs. 1491 and 1492).—When soaked effused-applanate, 2–3 mm. thick, extending several cm. Sudan brown color, tubercular swollen.

Papillae none. Basidia globose, hyaline, imbedded. Spores 5 x 10 hyaline, cylindrical, slightly curved.

Fig. 1491.

We place this in Exidia on its spore character. At first we thought of Exidia succina, named by Moeller from Brazil, but from description (cushion shape with hymenium on upper side) it can not be that species which, as nearly as we can translate the German, appears to be Exidia truncata of Europe, although he does not mention papillae, which are a prominent feature of the European plant. The type of Exidia Janus (Fig. 1492) called Tremella Janus by Berkeley is at Kew. It was from Cuba. It is of the same peculiar color as the plant from Rev. Torrend, and there is no doubt in my mind it is the same thing, although I did not find either basidia or spores on the type. Moeller evidently never found it. We present a photograph of the type of Exidia Janus (Fig. 1492) and specimens (Fig. 1491) (dried and soaked) from Rev. Torrend.

Fig. 1492

Fig. 1493

DACRYOPSIS BRASILIENSIS, FROM REV. C. TORREND, BRAZIL (Fig. 1493).—Dried plant is dark amber brown; when soaked, light amber yellow. Stipes distinct, 4–5 mm. Heads globose, slightly convolute. Basidia forked. Spores 6 x 12, cylindrical, curved. This is close to Dacryopsis depallens (Myc. Notes, p. 803) which is a Dacryopsis rather than a Dacryomitra as named, although it is doubtful if the two genera can be kept distinct. On comparison I think they are not the same species, differing in habits and in color when dried. Dacryopsis Brasiliensis grows gregariously, but separately on very rotten wood and not densely caespitose as does Dacryopsis depallens.

TREMELLA GLAIRA.—I found one time in Sweden covering the moist underside of a pine log in contact with the ground, a thin, glaireous, subhyaline film that on examination proved to be typically a Tremella structure. I did not photograph, because it would

not show in a photograph. There was a faint amber or greenish color to it when fresh. The basidia are globose, 12 mic., cruciate-septate, and have each four long sterigmata. The spores are globose, smooth, hyaline, 6–7 mic. I supposed at the time it was Tremella viscosa, but that is an Exidia, and thick enough to be classed as a Corticium in old days which this would never be.

The genus Tremella, as at present recognized, is rather broad, embracing species like this that are resupinate, and also erect, foliaceous species. No doubt the genus some day will be broken up into smaller sections, which will be called "new genera."

TREMELLA SARCOIDES, FROM J. M. GRANT, WASHINGTON (Fig. 1494).—This is the only violet Tremella I know, and can at once be told by its color (dark, nigrosine violet). It is not a true Tremella, but is the conidial state of a Discomycete called Coryne sarcoides now, and formerly Bulgaria sarcoides. It is one of those fungi that takes two fruiting forms and the early workers took it for two different species. Fries warns us against confusing them. A Dr. Capron is said to have been the first to establish the identity, and Tulasne clearly shows it on his plate (vol. 3, t. 17). This is the first time I have seen the conidial form, although I have a collection of the ascus form from Sweden. To the eye the two forms are similar, the same beautiful violet color and soft, gelatinous nature, but the plant has a better defined disk when it develops its ascus spores.

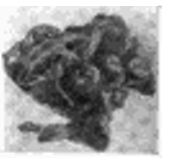


Fig. 1494

TREMELLA SAMOENSIS (Fig. 1495).—Sessile, foliaceous with rather firm lobes. Color, orange yellow. Basidia oval, 6 x 12, cruciate-septate, yellow, imbedded near the surface and apparently the ends of some of them reaching the surface. Spores globose, 6–7, hyaline, smooth.

Fig. 1495.

Fig. 1496.

I found this rarely in Samoa some years ago, but never tried to determine it until recently. Then I could not find anything that covered it. It is evidently quite close to Tremella damaecornis, as illustrated by Moeller, from Brazil, but surely it could not be compared in shape to an antler. Its basidia are of a different type from those of the genus Tremella, and it could be called a new genus. Instead of being imbedded deeply in the gelatinous tissue with long

sterigmata reaching the surface, the basidia are imbedded very close to the surface, some of them with the ends reaching the surface and forming a more definite hymenial layer than in the usual Tremella. Since the above was written I have gotten Tremella samoensis (Fig. 1496) from Otto A. Reinking, Philippines.

MONSIEUR PAUL HARIOT

Le portrait d'amateur de M. Paul Hariot, donné récemment par le Bulletin de la Société Mycologique de France excite en notre mémoire une protestation vigoureuse. Si rien de mieux ne pouvait être reproduit, on aurait dû s'en dispenser.

Pendant plusieurs mois j'ai fait des études spéciales au Museum de Paris. Là je venais chaque jour en contact avec M. Paul Hariot, qui tôt devint pour moi un ami personnel. J'étais ébahi de ses connaissances extraordinaires et vraiment cosmopolites. Nulle part, en aucun Museum il ne m'a été donné de rencontrer un savant qui fut une telle mine d'information sur les nombreux sujets de sa partie. Qu'il s'agît de champignons, d'algues ou de mousses, de fougères ou de plantes à fleur, Paul Hariot repondait couramment à toute question.

Je me souviens un jour de sa conversation avec un visiteur qui désirait connaître l'habitat de certaines rares fougères. Hariot l'indiqua sans hésitation; il connaissait la localité exacte ou l'on pouvait trouver en France chacune de ces plantes.

Son fort était la famille des Urédinées parmi les champignons. Il en avait fait une étude speciale et en 1908 il publia sur cette famille une monographie dont l'édition fut vite épuisée.

En 1910, dans notre étude sur les Hexagonas, nous publiâmes un portrait de M. Hariot. Ce portrait ne nous plaisait qu'à demi mais il était cent fois meilleur que celui publié par le Bulletin de la Société Mycologique de France. Si quelqu'un de nos lecteurs avait en sa possession une bonne photographie de M. Hariot, nous lui serions bien reconnaissant de nous la prêter afin que nous puissions reproduire dans nos Notes Mycologiques un vrai et bon portrait de ce savant. Il mérite assurément d'être mieux traité qu'il ne l'a été soit par nous-même en 1910, soit récemment par la Société Mycologique de France.

SIXTY YEARS OLD

Osler was right. They ought to chloroform them when they get to be sixty years old. Most men make fools of themselves when they get to be that age, and I suppose I shall not be an exception. I presume I shall continue in the line of fungus work, for it is my amusement and pastime. But I want to draw a sharp line between the work I have done in the past and that I shall do in the future. I am willing to stand behind every line of my publications to date, but as to the future, we can not tell what that may bring forth. However, I hope to avoid the rocks that have wrecked so many fair names.

First: The naming as a "new species" every little frustule and fragment that reaches me.

Second: Naming as "new species" specimens in sections of which I do not know the old species that are knowable.

Third: Discovering that old well-known sections are new genera and trying to palm them off as having merit when it is simply piracy.

Fourth: The curse of Kuntzeism; and from this curse I certainly hope to be delivered—the dupe of German propaganda, the Bolshevism of nomenclature, which blights the work of so many of our American victims and is beginning to get a hold in England.

Cincinnati, July 17, 1919. C. G. LLOYD.

THE GENUS RADULUM.

By C. G. LLOYD.

Cincinnati, Ohio - - - May, 1917.

Persoon originally separated the hydnoid fungi into two families: Hydnum, with regular, awl-shaped teeth, and Sistotrema, with deformed teeth. Fries divided the latter into Irpex, with irregular teeth, sinuately arranged, Radulum, with blunt, tubercular teeth, and Sistotrema he confined to a few species with broad, lamelliform teeth. The Friesian arrangement has been generally followed since, though in practice it is not always satisfactory, as these types of teeth grade into each other.

The genus Radulum, in this sense, embraces all the hydnoid plants where the teeth are short and tubercular form. Usually there is no trouble in referring species on this basis. But these tubercles must be large and permanent. If minute, it forms for me the genus Grandinia. There are several resupinate species, which when fresh and growing, and the tissue moist, have the hymenium swollen, tubercular, the tubercles disappearing as the plant dries and the hymenium becomes even. These are not Radulum, but classed in Thelephoraceae, viz., Corticium, Peniophora, etc., according to the hairs. When freshly collected they are liable to be referred to Radulum.

We divide Radulum into a number of sections, which of course could be made into genera, mostly "new," if one wished, but we feel it would only be confusing the subject.

SECTIONS.

APPENDIX.

PILEATE, SUBLIGNEOUS, PERENNIAL.

RADULUM BALLOUII.—Pileus subwoody, perennial, with a corrugated, dark surface. Context dark. Tubercles crowded, irregular, obtuse, deformed, "bright, golden yellow" when fresh, pale, isabelline when dry. Cystidia thick walled, pale colored metuloids. Spores subglobose, 5 x 6, hyaline.

A recently discovered and peculiar species growing on the living limbs near the top of the trees of the white cedar. Mr. Ballou is the only one who has collected it, but he states it is abundant in its inaccessible habitat. An account (erroneous in the statement that it is the second pileate species known) was given in Mycological Notes No. 41, page 563.

ILLUSTRATIONS.—Mycological Notes, fig. 769.

RADULUM CUNEATUM (Fig. 961).—Pileus thin, light cuneate, 2-3 cm. in diameter. Context thin, white, fragile. Surface light brown, glabrous. Hymenium alutaceous, tubercular, with flattened obtuse tubercles. Cystidia none. Spores 3-4 x 6-10, cylindrical, hyaline, smooth.

Fig. 961

This is a very rare plant, only known from recent collections of J. M. Grant, Washington. The feature of the plant is its very light weight, the tissue of fragile, spongy texture, composed of loosely woven hyaline hyphae. There is but one other similar species known, viz., the next from India.

RADULUM SPONGIOSUM (Fig. 962).—Pileus orbicular, with a short stipe-like base. Context soft and spongy. Surface of matted pubescence. Hymenium of tubercular folds. We did not cut the specimen and do not know whether it is devoid of cystidia as the American plant, or whether it has the large metuloids found in Radulum mirabile, the usual species of the East (Cfr. Letter 53, Note 163). A collection of this species was made by Hooker at Nepal, India, and named by Berkeley in 1854. It is only known from this collection, type at Kew, and a cotype at Upsala, from which our figure 962 was made..

Fig. 962

RADULUM PALLIDUM (Fig. 963).—Effused with a narrow, reflexed margin. Pileus thin, white, adpressed fibrillose. Hymenium

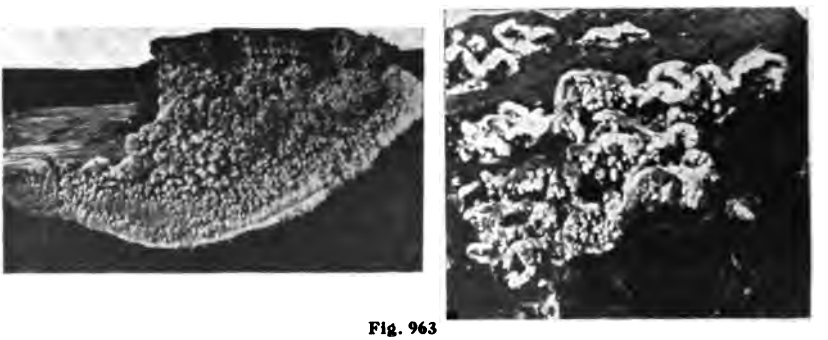


Fig. 963
Radulum pallidum.

yellowish when fresh, reddish brown when dry. Tubercles short, obtuse, glabrous, deformed, scattered or confluent in groups. Cystidia none. Spores 4 x 6-7.

This is rather a rare plant, often growing on burnt wood. The tubercles are prominent on the fresh plant, but shrink and largely disappear in drying. We take the species in the sense of Morgan, supposed to be in the sense of Berkeley, but we failed to compare it at Kew. We judge from our photograph of the type, however, that it is correct, although originally described as resupinate.

RADULUM MIRABILE (Fig. 964).—Mostly resupinate, with a narrow, reflexed margin. Hymenium of narrow, distant ridges. Metuloids large, 100 mic. hyaline, with thick walls.

Fig. 964

Radulum mirabile was originally from Ceylon, but seems fairly common in the East. The following appear to me hymenial variations of it, differing in hymenial configurations, sometimes the folds are deeper and pore-like, sometimes somewhat incipient. Radulum lirellosum (as Lopharia) from South Africa, is exactly the same as type form, as far as I can see. Also Radulum Emerici, India (without the reflexed pileus). Radulum Neilgherrensis from India has the hymenium more poroid, and Radulum Javanicum (as Lopharia) from Java more irpicoid. All have the same general appearance, however, the same large metuloids on the hymenium, and I believe are all the same plant.

RESUPINATE, TEETH SEPARATE.

RADULUM ORBICULARE (Fig. 965).—Resupinate, pale yellow with a white border. Tubercles irregular, elongated, pale yellowish. Spores 3½-4x8-10, cylindrical, hyaline, smooth.

Fig. 965

In Sweden, I found this most abundant, usually on the alder and birch. At first it starts as little orbicular patches, with a pubescent, white margin, that rapidly enlarge and coalesce. The tubercles at first are small, but in old specimens become quite large. They are generally blunt,

but irregular as to size and shape. In the United States I have collected it around Albany, N. Y., a depauperate form, but never at Cincinnati. Morgan's record on Carpinus refers to an entirely different plant.

ILLUSTRATIONS.—There is but one good one, Grev. t. 278.

FORMS.—In its well developed form (Fig. 965), so abundant in Sweden, it does not appear to occur in the United States. It is rare with us, and then with short, malformed tubercles (Fig. 966), has been mostly called Radulum molare in our literature. Fig. 967 is the form called Irpex Cerasi of Fries. We have from E. Bartholomew, Kansas (Fig. 968) a curious form on cottonwood with inflated tubercles. In Sweden we found on beech (Fig. 969) a form with short, deformed tubercles appearing as though they were worn away. I believe this to be the form called hornotinum by Fries, and it is the only form I found on beech.

Fig. 966

Fig. 967

Fig. 968

Fig. 969

Forms of Radulum orbiculare.

Fig. 970

Fig. 971

Fig. 972

Radulum quercinum. Fig. 970 a fresh plant. Fig. 971, dried specimen. Fig. 972, a young plant enlarged 4 diameters.

RADULUM QUERCINUM (Figs. 970-972).—Resupinate, usually orbicular with a byssine, radiating margin. Color pale reddish, drying darker. Teeth cylindrical, irregular, blunt, close, connivent in drying. Spores ellipsoid, 7-8 x 10-12, hyaline, smooth.

I found this in abundance in France, always on fallen oak branches. I had no doubt that it was what Persoon so named. I doubt the Radulum quercinum of Fries, whose description "white, then pallid" does not answer to Persoon's description nor to the specimens. I never found the plant in Sweden, and I do not think Fries knew Persoon's species. It is the specimen from Chaillet in Fries' herbarium on which Fries (not Persoon) bases his Radulum molare. My specimens were determined as Radulum membranaceum Bull. = Radulum molare, Persoon. I doubt that still more, for I see no resemblance to Bulliard's membranaceum nor Persoon's figures of molare, and they have no resemblance to each other. I have collected the plant only in France, but have a specimen from England.

ILLUSTRATIONS.—I think there have been no good ones given that will compare with the photographs we present. I am unable to find the old "Ray t. 1, fig. 4" which is everywhere cited. There is no such figure in my copies of either edition of Ray. Patouillard's and Gillet's figure are intended to represent the correct species, but neither figure is good.

RADULUM MOLARE (Fig. 973).—Resupinate, with no distinct border. Color white or pale, of the dried specimen yellowish. Teeth scattered, collected in nodules. Cystidia none. Spores 4 x 10 cylindrical, arcuate, hyaline, smooth.

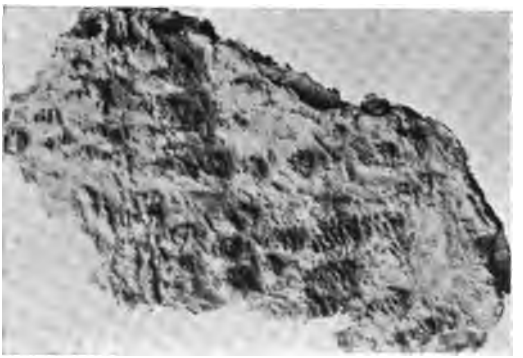


Fig. 973

I never saw the plant growing, and have but one collection that I think is right. It was collected by Fautrey and named by Patouillard, and I believe Patouillard and Gillet are the only ones of the French botanists who have it right. It was named by Persoon, Sistotrema molariforme, and he gave a figure of it. Fries got a specimen from Chaillet of Radulum quercinum, which was the basis of Fries' idea of the species. He not only got the species wrong, but he arbitrarily changed Persoon's name to Radulum molare, which was proper and is legal now, according to the dictates of our learned lawmakers. Radulum molare is recorded in the United States by Morgan and Ellis, but their plants have no resemblance to the European species.

ILLUSTRATIONS.—Persoon, Myc. Eur. t. 22, fig. 1, not accurate, but characteristic. Gillet t. 93, good. (Cooke Aust. Handbook, fig. 71, has no resemblance to it.)

SPECIMEN.—France, F. Fautrey.

RADULUM TOMENTOSUM (Fig. 974).—Resupinate, sordid white with a yellow tinge, confluent, with thick, swollen border. Teeth small, deformed, with a tuft of hyaline hyphae projecting at the apices. Spores 3½-4 x 7-8 hyaline, smooth.

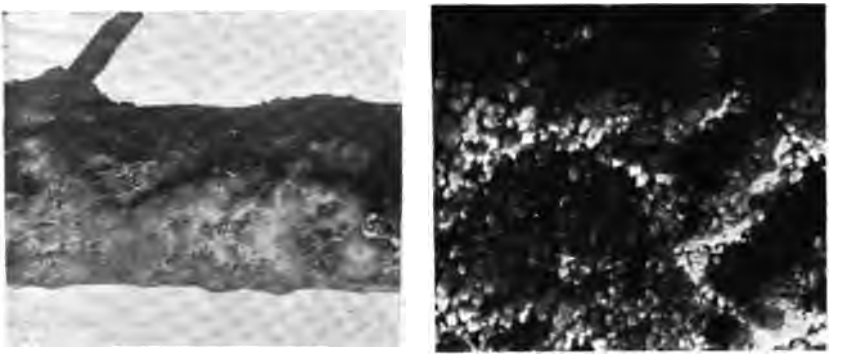


Fig. 974

Radulum tomentosum, natural size, and teeth enlarged.

I know this only from collections made in Sweden on willow. It is very doubtful, but I question not it is what Fries had fresh "ad salicum." The original came to Fries from Montagne, on pine. I have a phogotraph of the poor type in Montagne's herbarium, which is probably not this plant. Still we need a name for the plant on willow, and I believe it is in the same sense as Fries knew it fresh, and no one knows what Montagne's plant was.

RESUPINATE, DECORTICATING.

RADULUM LAETUM (Fig. 975).—Innate, growing under the bark of Carpinus, which it bursts. Color reddish brown. Tubercles concolorous, irregular, long, distant, rigid. Metuloids mostly imbedded. Spores 5 x 9-12, cylindrical, often arcuate, hyaline, smooth.

Fig. 975

This was very common on the fallen branches of Carpinus in France, but I do not know it elsewhere. It is held now by Bourdot, not to be an autonomous species, but a condition of Peniophora incarnata of which it has same structure. I think that is right.

RADULUM FAGINEUM (Fig. 976).—Innate resupinate, growing under the bark, which it decorticates. Color white, discoloring in drying. Teeth slender, or deformed. Spores hyaline, oblong, 3-4 x 6-8, smooth, guttulate.

Fig. 976

This is common in France on beech and other thin-barked branches, growing under the bark, which it finally bursts. The teeth are too slender for Radulum, in fact a better Acia (or Odontia for me), and as suggested by Bourdot, no doubt a decorticating form of Odontia fallax. It was called Radulum fagineum by Fries (but ? as to Persoon) and in recent French works (Quelet, Bourdot, Bresadola) is referred, in error, to Radulum quercinum.

ILLUSTRATIONS.—None published, recognizable.

RESUPINATE, WITH COALESCING TEETH.

RADULUM CASEARIUM (Fig. 977).—Resupinate, with no distinct margin, white, drying discolored. Teeth agglutinated into large wart-like bundles. Cystidia none, but a few slender, hyaline,

Fig. 977
Radulum casearium.

projecting hyphae from ends of warts. Spores globose, hyaline, smooth, with a large gutta, 5 mic.

Morgan found this at Cincinnati and named it Hydnum caseārium. I never found it here, nor have I ever seen other specimens or records from the United States. It is a very rare plant with us, and apparently northern. I found it in quantity at Temagami in northern Ontario, growing for wide extent, on poplar.

RADULUM HYDNOIDEUM (Fig. 978).—Resupinate, with no distinct margin, thick, curling in drying. Color uniform, orange yellow when fresh, becoming Mars orange in drying. Hymenium on large, thick, irregular, granular protuberances. Gleocystidia abundant, 8-10 mic thick, mostly imbedded and short, sometimes projecting 40-60 mic. Spores hyaline, not found by me in dried material.

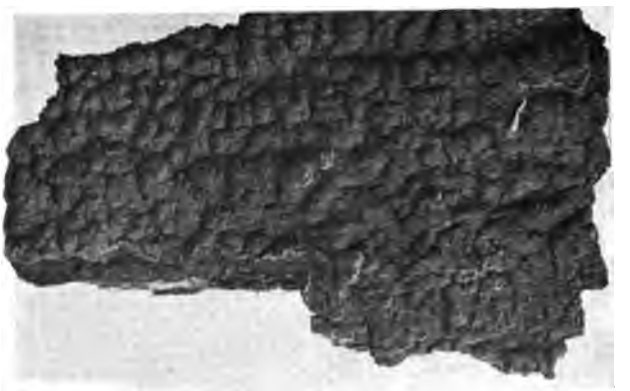


Fig. 978
Radulum hydnoideum.

This is a brightly colored plant, not common, but often over large extent when found. It is most peculiar in structure. The hymenium covers the little granules over the large warts, hence technically for me it is a warty Grandinia. The abundant gleocystidia are mostly imbedded and the colored contents give the color to the plant. Sometimes these bodies project, then they could be called metuloids with colored contents. The basidia and spores are no doubt hyaline when growing. They are faintly colored in dried specimens.

Schweinitz named this plant Phlebia hydnoidea, and so it is compiled in Saccardo, Vol. 11. Berkeley called it Odontia lateritia, and afterward admitted it was the same plant. Peck, who knew it by Berkeley's name, changed it to Phlebia lateritia. For me it is a Radulum, not a Phlebia (*).

SPECIMENS.—Cincinnati, A. P. Morgan. (I never found it in this locality.) Columbus, W. A. Kellerman. West Virginia, C. G. Lloyd.

* My friend, Prof. McGinty, protested violently against calling it either. He proposes Gleoradulum for it (viz., Gleoradulum hydnoideum (Schw.) McGinty), and states as soon as the hair experts find that it has hairs with colored contents they will propose a "new genus" for it, (and adopt his name if they are honest about it).

RADULUM OWENSII (Fig. 979).—Resupinate, Mars orange (when dry), with growing margin. Tubercular, with large irregular protuberances. Cystidia none. Basidia subhyaline in a palisade layer. Subhymenial tissue deeply colored. Spores 3-4 x 6-8, hyaline, smooth.

Fig. 979

To the eye this has the appearance of Radulum hydnoideum, same color and similar hymenial configuration, and it was so referred when received. It differs in every feature in its structure. It was found by C. E. Owens (No. 2028) on Quercus Garryana at Corvallis, Oregon. (See Appendix 2, page 12.)

APPENDIX I.

Heterobasidial Radulum, viz., Heteroradulum (McGinty), Basidia septate.

RADULUM KMETII (Fig. 980).—Resupinate, broadly effused with adpressed, white margin, rarely slightly reflexed. Color of fresh hymenium reddish bay. Tubercles scattered, irregular, single or in

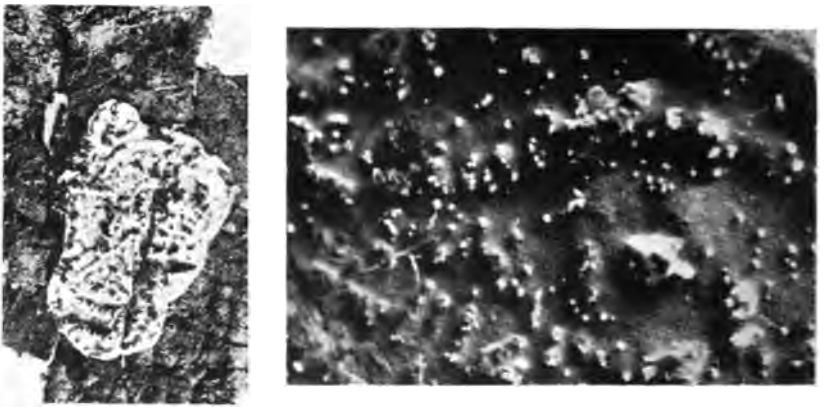


Fig. 980

Radulum Kmetii, natural size, and hymenium enlarged 6 diameters.

clusters, largely disappearing from dried plant. Basidia large, subhyaline club shape, forming a palisade layer, very faintly, longitudinally septate when old. Spores large, oblong, 8 x 18-20, with granular contents and many with a large gutta.

This is not a rare plant in Europe, on frondose wood, and is reported from Idaho and Oregon. I do not know it with us. I found it several times around Upsala, and the fact that there is no plant in Fries' writings to which it can possibly be referred, is evidence of the scanty attention Fries paid to resupinate fungi, after he moved

to Upsala. Berkeley found it in quantities in England and referred it to Stereum rufum, to which it has about the same resemblance it has to a wart. He also named several little frustules, Radulum deglubens and Radulum spinulosum, and no doubt others, of which he had no idea, however vague, of their identity, but they come in handy for name changing. The first intelligent account of the plant was given by Bresadola (Fungi Kmet.), 1897, when he named it Radulum Kmetii, and under this name it became well known in Europe. The basidia form a palisade layer and mostly appear like the usual basidia. When old they become faintly septate. Bresadola did not note this at first, and ten years later when he did note it, he transferred the plant to the genus Eichleriella, a genus with a smooth hymenium. He should have made a new genus for it, for the transfer of a "Radulum" to the "Thelephoraceae" is breaking down all the old ideas of classification. If some one (besides McGinty) would propose a "new genus" for it, we should be glad to adopt it, for while we recognize the obscure character of septate basidia to be good generically, it is contrary to our views to include a hydnaceous plant in a thelephoraceous genus. The fresh hymenium as shown in our photograph is pruinose to the eye. I can not explain that, for I find nothing on a section of the dried plant to account for it.

SYNONYMS.

The European species of Radulum were all named by Persoon as Sistotrema. Fries used the names (arbitrarily changing one), and the names have become established. I have collected and studied the plants that Persoon had in France, and those of Fries in Sweden, and of their herbariums, and my conclusions are that while Fries used Persoon's names, he misinterpreted most of Persoon's plants. I do not know what our learned law makers think about it, but it appears to me that the proper thing to do is to take the names in the sense of Persoon who named them. A number of little frustules drifted in to Berkeley from time to time, which he "named." We present photographs not only of the "types," but of *all the types*. Naturally, no one can tell what they are, or ever could, and they are only so much rubbish. Occasionally, after a species becomes well known, one of these little frustules may be recognized, or so claimed, in the light of what has elsewhere been learned about it, and the name "restored" in the place of the name given to it by the man who really named it and made it known. I can see no merit in such procedure.

There are a few sporadic species proposed, that I do not know, or have not looked up, and they are omitted from this list.

Irpex Cerasi, Fries S. M., p. 382 (as Polyporus) = Radulum orbiculare (cfr. Elench, p. 146), (cfr. p. 4.)

Lopharia Javanica = Radulum Javanicum.

Lopharia lirellosa, South Africa, Kalchbrenner. This genus was based on Radulum mirabile, the author unaware not only of Berkeley's species, but of the genus. He based it on the narrow, hymenium ridges. Afterwards Massee discovered that Radulum mirabile had hairs (metuloids) and proposed the genus Thwaitsiella. Then Patouillard discovered that Kalchbrenner's plant had hairs (metuloids), and proposed to so define Kalchbrenner's generic name, though Kalchbrenner had no more idea of it than has the man in the moon. If a genus is based on these hairs, then Massee's name should be taken on the principle of "priority" of ideas, not names.

Odontia Cerasi, Pers. Obs. 2, 16 = Radulum orbiculare.

Phaeoradulum. Name proposed for Radulum with colored spores. I do not take much stock in the "Phaeo" genera. But one species known, Radulum guadelupense, from the West Indies, and that known "only from the type locality."

Radulum aterrimum, Fries. Although Fries gave a figure of this in his Icones, it is not a Radulum. It has a resemblance, but no relation to it. In fact, it is not a Basidiomycete. Berkeley published years ago that it was Sphaeronema, viz., a sphaeroid, and its carbonous tissue should have shown any one that it is not a Basidiomycete. Sydow found that it had colored spores, hence it became "Phaeoradulum aterrimum (Fr.) Sacc. & Syd." which is very much of a bull if it is a Pyrenomycete or Sphaeroid, as English mycologists have claimed. I never examined it, but from external appearances, I do not doubt the English view.

Fig. 981

Radulum Bennettii, United States, Berkeley. Type (fig. 981) a mere frustule. Unknown otherwise.

Radulum botrytis. Probably an abnormality of Corticium comedens, as suggested by Fries himself.

Radulum deglubens, England, Berkeley. Type a mere frustule, same as Radulum Kmetii, and the basis of Eichleriella deglubens (Berkeley) McGinty.

Radulum Emerici, India, Berkeley. = Radulum mirabile without reflexed border.

Radulum glossoides, Persoon. Referred now to Radulum laetum.

Radulum hydnans, Schweinitz. The American form of Radulum orbiculare, with depauperate teeth.

Radulum Javanicum, Java. Hennings, as Lopharia = Radulum mirabile, more irpicoid than usual.

Fig. 982

Radulum lirellosum Kalchbrenner (as Lopharia) = Radulum mirabile from South Africa. Exactly same plant, as far as I can note.

Radulum Magnoliae, Type (fig. 982), a mere frustule, not known otherwise.

Radulum membranaceum, Bresadola, Fung. Kmet. (not Bulliard t. 481, f. 1) = Radulum quercinum.

Radulum molariforme, Chaillet, specimen sent Fries, the basis of Fries' idea of Radulum molare = Radulum quercinum.

Radulum Neilgherrensis, India, Berkeley. = subporoid Radulum mirabile.

Radulum pendulum. Known only from Fries Icones. t. 195. No specimen at Upsala or elsewhere, I believe. It is represented as pure white, pileate, and hanging by a narrow attachment to the host, like a wasp's nest. It is very curious—if true.

Radulum quercinum, Bresadola, Fung. Kmet (not Persoon) = Radulum fagineum.

Radulum spinulosum. Type ((fig. 983), a mere frustule, same (teste Burt, on viewing a microscopic portion of the frustule), as Radulum Kmetii and the basis of Eichleriella spinulosa (Berk.) Burt.

Sistotrema molariforme, Persoon, changed by Fries to Radulum molare, which change, though purely arbitrary is legalized by our learned law makers. We accept and use it, not because Messrs. Atkinson and Maire have so decreed, but because it has become established by use. I never could understand why Persoon, who did the best work and named the most plants, should legally be denied the benefit of those "sacred laws of priority."

Fig. 983

APPENDIX II.

The uncertainty and instability of genera based on hymenial configuration is illustrated by two plants considered as Radulum in this pamphlet. Since the pamphlet has been standing in type additional specimens received throw doubt on two species being Radulums.

Irpex Owensii, (as Radulum Owensii, page 10). Additional collections show that when the teeth are well developed they are irpicoid and better classed as Irpex. (Cfr. Myc. Notes, p. 616, fig. 873).

Radulum (?) cuneatum, (cfr. page 2). Since this pamphlet has been in type we have received from Henry C. Gilbert, Oregon, additional specimens of this species, which show that the hymenium is meruloid (Fig. 984) and probably that is the natural configuration when well developed, and that the plant had better be classed as Merulius. Also that our name cuneatum was not well chosen, for these specimens are not cuneate but attached by a broad base.

Fig. 984.

THE
GEOGLOSSACEAE

(Viz., The genus Geoglossum and related genera.)

By

C. G. LLOYD.

CINCINNATI, OHIO, ... MAY, 1916

ELIAS J. DURAND.

It is particularly appropriate that a work on Geoglossaceae should present the photograph of Prof. Elias J. Durand, whose careful and critical studies and investigations have placed the subject on a firm and accurate basis. Since the days of Persoon there has been no comprehensive, careful work done on the subject until the appearance of Durand's paper.

The Geoglossaceae.

LEGEND.—The exhaustive and critical account of the Geoglossaceae of North America published by Elias J. Durand in a German periodical in 1908, leaves very little to be done with this class of plants by future workers in America. Personally, we have not worked much with them, and have but few specimens. We have gone over our specimens, in the light of Prof. Durand's work, and have written a summary of the section to bring this class of plants to the special notice of our correspondents, who we hope will collect them more liberally in the future. While we feel that little will ever be added to the subject in America, owing to Prof. Durand's very thorough work, there are many enigmas to be solved as to the European species, and the foreign species are practically unknown. We use, in the main, the same names employed by Durand, but in a few instances have used other names that seem to us more appropriate or correct. These few deviations involve no "new combinations," however, and are explained in the text.

The Geoglossaceae are Discomycetes, namely, plants that have their spores in asci. They are mostly small plants of a fleshy texture, and in form are clavate or have a capitate head. The hymenium consists of a palisade layer covering the outside fruiting portion. It is made up of asci containing the spores and usually associated with sterile bodies called paraphyses. In closely related species the spores and paraphyses are the principal points of difference.

In the very old works they were mostly called Clavaria, from their usual shape. Persoon first separated them on account of having asci, and it is an evidence of his genius that with the crude lens at his service he was able to note this feature. In Saccardo they are made a section of Helvellaceae, to which they are closely allied. Boudier proposed to disassociate them from Helvellaceae, on account of the asci opening by pores, an obscure feature of more hindrance than service in practical classification. The spores are an important aid in determination of species and their grouping in the genus. I feel, however, that the recent breaking up of the genera into small fragments, which are called "new genera" on spore characters, is more confusing than helpful. The old genera were natural associates of plants that could be recognized in the field. The new genera are artificial products of the laboratory, nor is there any particular originality or merit in them, for the spore characters were well known long before it was proposed to base new names on each spore shape and color. The man who makes two blades of grass grow where one grew before is said to be a benefactor of the human race, but I doubt if the same is true of the man who proposes two names where one will answer the purpose, and do just as well, if not better.

The spores of the Geoglossaceae vary in shape from oval to filiform, in color from hyaline to dark, in septation from non-septate species (continuous) to those with many septa.

Saccardo divides the genera into three sections, on their spore characters, and using the old feature of shape of the plant, recognizes nine genera. He removes Leotia to another section, on account of its gelatinous nature. A weakness of his scheme is that a number of species belong to one section on the character of some spores, and to a different section on the character of other spores of the same speci-

men. Durand uses eleven generic names, Boudier increases them to thirteen. The older workers got along with five or six, and they had enough.

GENERA.

We follow closely the older, and we think better, idea of basing the genera on the most obvious, macroscopic feature.

1ST DIVISION, GEOGLOSSAE. CLUB SHAPE.

GEOGLOSSUM.—Plants club-shape, usually compressed, fertile portion not decurrent on the stem, and not very distinct from the stem. Spores elongated, cylindrical, but not filiform.

SPATHULARIA.—Plant compressed, spathulate or fan-shape. Fertile portion strongly distinct from the stem and decurrent on opposite sides. Spores filiform.

2ND DIVISION, LEOTIEAE. WITH A CAPITATE HEAD. PILEUS WITH A FREE MARGIN, OR ADHERENT TO THE STEM.

MITRULA.—Fleshy or subgelatinous. Pileus hemispherical or ovate, distinct from the stem. Spores narrowly elliptical or fusiform, hyaline.

LEOTIA.—Gelatinous and viscid, particularly in wet weather. Pileus with revolute, free margin. Color greenish olive, or some species have intense green pilei. All have a greenish cast. Spores elliptical-fusiform, hyaline, often with a faint greenish cast, continuous, or tardily (and rarely) 5-7 septate.

CUDONIA.—Fleshy, leathery, slightly viscid when young. Terrestrial. Pilei with revolute free margin. Spores hyaline, filiform, continuous (or rarely and tardily septate).

VIBRISSEA.—Subgelatinous. Aquatic, or semi-aquatic in habits. Heads hemispherical, convex, subdiscoid, the margin not revolute. Spores hyaline, filiform, 1 x 100-250 mic., continuous.

GEOGLOSSUM.

For the most part, Geoglossums resemble, to the eye, the simple Clavarias, and they are sometimes confused with Clavarias.* With a little experience they can be distinguished at sight, and the microscope is a sure means of distinguishing them from Clavarias, if there is any doubt. Geoglossums are more abundant in pine woods regions. It is very rare that we ever find one around Cincinnati. All Geoglossums are fleshy plants, and in color are yellow, olive, greenish, purplish or black. There are very few truly black, fleshy fungi, excepting in this family. The similar shaped, black fungi with carbonous tissue are Xylaria with entirely different type of fruit.† Genera have been based on these colors, but I can not see why color is more important in Geoglossum than in other fungi, and I do not recall any other genus based on color alone.

The spores of Geoglossum are hyaline, or with a faint trace of color, or some are deeply colored. In shape they are mostly cylindrical or fusoid, several times longer than thick. None are known, however, with filiform spores. One species (G. irregularis) has short, elliptical spores, hence made into a new genus or put with Mitrula by some authors. Genera based on the spores, as previously stated, are, in our opinion, more confusing than useful. Some species have spores usually continuous, that become tardily and rarely septate,‡ which would indicate that septation is one of the poorest characters on which to base genera. Other species, particularly those with colored spores, are always strongly septate. All Geoglossums with colored spores have the spores hyaline when young, and in a few species they

* Thus Clavaria nigrita of Fries' latest work is a Geoglossum. What the original of Persoon is, however, is not known.

† Notwithstanding Xylaria geoglossoides, as named by Schweinitz and compiled in Ellis, is according to Schweinitz' specimen (not his drawing) a Geoglossum.

‡ Thus the most common species, Geoglossum luteum, I have always found to have non septate spores. I never saw a septation in one of them, but I do not question the observation that they are finally septate when fully mature.

are slow in acquiring any color, hence are liable to be mistaken for hyaline spores. There is one section of Geoglossum, characterized by colored spines (setae) in the hymenium. Setae are found on the hymenium of many Basidiomycetes, such as Hymenochaete, Polyporus, etc., but as far as I know, no other Ascomycetes have them.

The sterile bodies that accompany the asci in Geoglossum, called paraphyses, are often characteristic of species. They have been illustrated with more or less (usually less) accuracy by several authors, and Durand is the first to give a series of careful and accurate drawings. We reproduce (Figs. 782-786) Durand's drawings of the paraphyses and spores of five of the principal black species.

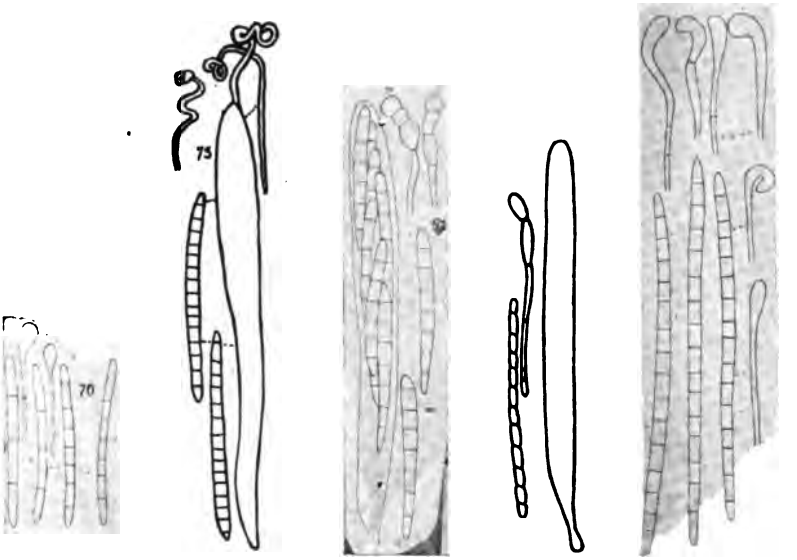


Fig. 782. **Fig. 783.** **Fig. 784.** **Fig. 785.** **Fig. 786.**

Paraphyses and Spore: Fig. 782, Geoglossum glutinosum; Fig. 783, Geoglossum difforme; Fig. 784, Geoglossum glabrum; Fig. 785, Geoglossum paludosum; Fig. 786, Geoglossum hirsutum. All from Durand.

The genus Geoglossum may be consistently divided into two general sections, as follows. Or if one wishes to multiply the "genera," they may be subdivided into four, as advocated by Boudier, or into six, as Durand would have it. In my opinion, the old method of having one genus was the best and simplest.

SECTION 1.—Plants not black when fresh, usually yellow, purplish brown or greenish. Spores hyaline, usually continuous or when old sometimes multiguttulate. They are said to be finally septate, but I think this is a kind of false septation, and is rarely seen, at least by me.

SECTION 2.—Plants black when fresh. Spores hyaline and continuous when very young, but usually soon colored and distinctly septate. Page 9.

SECTION 1.—Geoglossums not black when fresh. Spores hyaline, usually continuous. Some of the species when dried are black, but when soaked have a lighter color.

Plants bright yellow, spores short,	G. irregulare.
Plants bright yellow, spores long,	G. luteum.
Plants pale smoky yellow,	G. fumosum.
Plants cinnamon brown, spores dimorphic,	G. longisporum.
Plants dark brown, spores not dimorphic,	G. robustum.
Plants greenish brown,	G. olivaceum.
Plants green or greenish olive,	G. viride.
Plants purplish brown,	G. atropurpureum.

GEOGLOSSUM IRREGULARE (Fig. 787).—Plant yellow, clavate, irregular, compressed or lobed, tapering below to a short, rather distinct, yellowish or whitish stem. Spores small, hyaline, elliptical, varying much as to size, 4-5 x 6-10. Paraphyses (?) filiform.*

Fig. 787.

This species so closely resembles a Clavaria in general appearance that no doubt it has been mostly mistaken for a yellow Clavaria. It grows abundantly, it is stated, in the pine woods of Northern New England and Canada. Peck says that, notwithstanding its small size, it is important as an edible species, and grows in such profusion in wet, mossy places that it would not be difficult to gather a pint in a short time. The spores in my specimen are narrower than shown in Durand's figure. There is a record in Europe of a similar species, Geoglossum vitellinum, held by Durand as distinct on account of smaller spores. It must be rare in Europe, for it was only "discovered" in recent years. The spores were given by its author Bresadola, as about the same size as our American plant, 4 x 7-8, and I have no doubt it is practically the same plant. There is more variation than that in spores from the same American specimen.

ILLUSTRATIONS.—Peck's 48th Report, pl. 5, f. 8-14. Bull. N. Y. S. Mus. No. 2, pl. 1, f. 5-7. Both of them look very stiff to me. Our figure, made from dried specimen, shows striations that the fresh plant does not have.

SPECIMENS.—I have but one collection of this frequent species, from J. Dearness, Canada.

GEOGLOSSUM LUTEUM (Figs. 788 and 789).—Fresh plant, bright, golden yellow. Fertile portion, distinct from the stem, compressed, usually grooved on one side, smooth, dry. Stem paler yellow than the club, covered when fresh with scurfy scales. Spores hyaline, 6 x 28-32, curved, continuous. They are said to be septate when mature†. Paraphyses slender, hyaline, rarely septate, thickened and curved at the apex.

Fig. 788.

This is our most frequent species in frondose woods, and is readily known by its yellow color and scurfy stem. It is quite well named "luteum," and a plant well named is half determined. In drying, it becomes darker and brownish.‡

ILLUSTRATIONS.—Our figure 789, photographed by G. D. Smith, is perfect, but is a more robust species than is usual. Our figure 788 is of the average size. The original figure by Peck, also those by Massee and Cooke, are all badly colored and inaccurate in several respects.

SPECIMENS.—Massachusetts, Geo. E. Morris, Simon Davis, L. C. Allen; Michigan, West Virginia and Ohio, C. G. Lloyd.

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* Durand reports paraphyses absent. It seems to me I can see them, but I may mistake immature asci for them. Bresadola not only reports them, but he figures them.

† They are so described and figured by Durand and Massee. Neither Peck nor Miss Hone have ever found any septate spores. I have examined spore deposits thrown down from the fresh plant, and all spores I have seen are continuous. I note some guttulate spores, but no septations. Still, I do not say that they do not occasionally become septate, but I think, very rarely.

Fig. 789.
Geoglossum luteum. Photograph by G. D. Smith.

GEOGLOSSUM FUMOSUM.—Excepting as to color, this plant has all the characters of the preceding. The spores, paraphyses, stature, scurfy stem are all the same. The color of the fresh plant is smoky, yellowish, more smoky than yellow, and when dry it turns brown without a trace of yellow. It was named by Peck as a form of Geoglossum luteum, but appears to me to be very distinct. It is a northern species, and rare. I gathered it at Temagami, Canada, and have collections from Geo. E. Morris, Massachusetts, and Isabel M. Walker, Quebec.

Geoglossum elegans.—Stem very slender. Head short, clavate. Spores 4 x 12-16, hyaline, fusiform. Paraphyses filiform, hyaline. I have some poor specimens from E. G. Britton which grew in a sphagnum swamp. It agrees well with Cooke's Figure 182, excepting as to color, which I do not know. The species is doubtful and is referred by Durand to Mitrula phalloides.

GEOGLOSSUM LONGISPORUM.—Entire plant cinnamon brown, smooth, slightly clammy. Fertile portion grooved, compressed. Stem brown, smooth, longer than the fertile portion. Spores dimorphic, each ascus containing two kinds of spores, viz., two long, 5 x 60-100 mic., hyaline, continuous, finally guttulate and septate, and six small but similar spores, 3 x 12-18 mic. Paraphyses filiform, hyaline, with curved apices.

This is quite a rare species and the only one known with dimorphic spores. I made one collection in Michigan. There are only

‡ An English author, who may have thought that "rufum" was pidgin Latin for "yellow," or who did not know that the plant was yellow, referred to the species as Geoglossum rufum, which is all right for an Englishman. But an American who knows that the plant is "yellow in every part" should have more discrimination in the selection of his name. As I have previously published, he would probably have had more regard for the fitness of things if he were naming a yellow dog.

three other collections recorded. It is the only species known with dimorphic spores, and Durand is the only one who has noted it.

GEOGLOSSUM OLIVACEUM.—Gregarious or caespitose, hollow, irregularly compressed, greasy to the touch but not viscid, dark, olive brown. Stem smooth, paler than the club. Spores 5-6 x 12-16, curved, hyaline, fusiform, continuous. Paraphyses filiform, subhyaline, very slightly thickened above.

This is a fairly frequent species both in Europe and the United States. The color is described as "greenish buff or smoky tint," but in the original description by Persoon is given as olive fuliginose, and his figure is olive brown. Berkeley states the color in drying is purple rather than olive. The dried specimens are very dark, almost black, but when soaked are of a lighter color.

ILLUSTRATIONS.—Pers. Obs. 1, t. 5, f. 7: Cooke's Mycographia, t. 4, fig. 13; Berkeley's Outlines, t. 22, fig. 3 (color purplish); (Patouillard f. 65 is evidently Geoglossum viride).

SPECIMENS.—District of Columbia, Mrs. E. M. Williams; Ohio, near Cincinnati (scanty), C. G. Lloyd.

GEOGLOSSUM VIRIDE.—Plants solitary or gregarious. Club olive buff, with a greenish tint, sharply delimited from the stem. Stem squamulose, pea green, more green than the fertile portion. Spores elliptical, oblong, 5-6 x 14-22, hyaline, continuous. Paraphyses filiform, slightly thickened at the apices and tinged green, agglutinate at the extremity, forming a green epithecium.

This is not a rare species both in Europe and the United States. We have no specimens. It frequently grows with Leotia viridis, and is similar in color. It was well figured in Theo. Holm's old work (called Clavaria mitrata b), and named by Persoon. In drying, it becomes dark, almost black.

ILLUSTRATIONS.—Holm (as Clavaria mitrata b). The oldest and probably the best; Sturm's Flora. Fasc. 3, No. 48, fair; Greville, t. 211 (too green); a number of others.

GEOGLOSSUM ATROPURPUREUM.—Plants solitary or gregarious, dark purplish, drying black. Stem paler than the fertile portion, minutely squamulose. Spores 4-5 x 25-30, hyaline, continuous. Paraphyses filiform hyaline, slightly thickened, united at the apices to a thin, brown layer, forming an epithecium.

This is a rare species, occurring rarely both in the United States and Europe. Persoon states that it comes late in the season after the cold rains. It was originally named by Persoon from Holm's figure Geoglossum purpurascens, afterwards changed to Geoglossum atropurpureum. I have no specimens.

ILLUSTRATIONS.—But two colored figures have been given from the growing plant viz., Holm's (as Clavaria mitrata a), and Persoon Obs. 2, t. 3, f. 5. Batsch's figure is crude and doubtful, probably Clavaria pistillaris, and Cooke and Massee's are dried specimen products.

GEOGLOSSUM ROBUSTUM.—This is a rare American species, differing from the preceding in darker color, brown, almost black, no purplish tint, larger spores, 4-6 x 25-50, and paraphyses with bent apices, and epithecium thin and not conspicuous. As both species become black in drying, dried specimens, I judge, are difficult to distinguish. I have a specimen from Geo. L. Morris, Massachusetts.

GEOGLOSSUM ARENARIUM.—A boreal species known only from very northern localities, Greenland, Labrador and Newfoundland. It is only known from dried specimens, which are black, but the spores are the same type as the pre-

ceding species, and the color of the fresh plant is no doubt dark brown. Spores 6 x 25-35, hyaline, continuous. Paraphyses brown, cylindrical, longer than the asci, the apices clavate, thickened and curved. The dried specimens can be readily distinguished by the peculiar paraphyses.

SECTION 2.—Black Geoglossums with colored, septate spores.

Black Geoglossums are readily divided into three subsections, from characters of the fresh plant:

1st, Viscid.
2nd, Not viscid, smooth or merely clammy.
3rd, Hirsute.

VISCID, BLACK GEOGLOSSUMS.

GEOGLOSSUM GLUTINOSUM.—Plants black, viscid. Fertile portion compressed, not sharply distinct from the stem. Stem slender, smooth, viscid. Spores cylindrical, dark, 5-6 x 60-100, 3 to 7 septate. Paraphyses (Fig. 782) cylindrical, exceeding the asci, with brown, abruptly piriform or globose apices.

This appears to be fairly frequent in Europe and the United States. It can be readily known from its viscid stem and knobbed paraphyses. The originals in Persoon's herbarium have 3 septate spores, and are so shown in Gillet, but our American plant is usually 7 septate, teste Durand. If held as the same species, it rather invalidates the worth of the septum character of species. Boudier represents a plant with hyaline paraphyses, which does not accord with any other figure. Durand states it was mistaken for Geoglossum nigritum, which is not a viscid species, and Boudier in his text states that his plant is not viscid. Our leading authors should be more in accord on the subject, for such directly contradictory statements are hard to reconcile.

GEOGLOSSUM VISCOSUM.—In most of the mycology of Europe, Geoglossum viscosum is held as distinct from Geoglossum glutinosum, in having a cylindrical (not compressed) club. Cooke and Gillet both show that the species have differently shaped paraphyses. Massee claims there is but one species, and Durand says all specimens he has seen represent but one species. The old fellows were pretty positive about it, but the new fellows may have it right.

GEOGLOSSUM AFFINE.—This seems to be based on one collection, and to be so close to Geoglossum that the only point of difference is that the cells of the paraphyses are more irregularly swollen. It is cutting the cloth pretty fine to maintain a species on such scanty collections and such slight differences.

GEOGLOSSUM DIFFORME (Fig. 790).—Plants black, smooth, viscid. Fertile portion compressed, not distinctly marked from the stem. Spores 6-7 x 100-125 mic., deeply colored, 15 septate. Paraphyses longer than the asci, with brown, much coiled and twisted apices.

This, the most frequent, viscid, black species we have, seems to be more common with us than in Europe. It is readily known by its 15 septate spores and coiled paraphyses (Fig. 783). In Europe it is apparently rare and northern. Although Fries, in describing it, emphasized its viscid nature, the English mycologists applied

Fig. 790.

the name to a non-viscid plant, and so illustrated an entirely different species. Their accounts of the subject are as crooked as the paraphyses (Fig. 783).

ILLUSTRATIONS.—Massee, t. 12, fig. 42 and 43. Cooke, fig. 5, both as Geoglossum Peckianum.

GEOGLOSSUM BARLAEA, as illustrated by Boudier, is about the same plant as Geoglossum difforme, but with shorter (85-95 mic.) seven septate spores. It is a very rare species, known only from Southern France.

NON-VISCID, SMOOTH, BLACK GEOGLOSSUMS.

GEOGLOSSUM GLABRUM (Fig. 791).—Plant black, smooth, not viscid. Fertile portion lanceolate, compressed. Stem rather slender, minutely scurfy. Spores 7-8 x 60-100, dark, 7 septate. Paraphyses (Fig. 784) slightly longer than the asci, pale brown, septate. Apical cells short, swollen, less than twice as long as wide.

Fig. 791.

This is a frequent species, both in the United States and Europe. It was named by Persoon who, notwithstanding the name, described the stipe as squamulose. When fresh the fertile portion is not viscid, but clammy. Bulliard illustrated it as Clavaria ophioglossoides, attributed to Linnaeus, but Linnaeus did not know one black species from another. The name, however, has been adopted in Saccardo. Two species were illustrated by the very old mycologists under the name Clavaria ophioglossoides, and Persoon was the first to have a clear idea of them.

ILLUSTRATIONS.—The only colored figure that correctly presents the paraphyses is Boudier's t. 423. Gillet, Massee and Cooke all give inaccurate figures, exaggerating both the uniformity and the bead effect of the cells.

SPECIMENS. — Massachusetts, Geo. E. Morris; Washington, D. C., F. J. Braendle; Maryland, W. T. Lakin; West Virginia, C. G. Lloyd; France, Exposition at Paris.

GEOGLOSSUM NIGRITUM.—While I think this is really distinct from Geoglossum glabrum, it is too close for comfort. The only tangible difference is that the terminal cells of the paraphyses are more elongaged, but it is only a question of degree. Massee, who held them to be one species, shows the difference much exaggerated, in the two right-hand paraphyses of his figure 45. The name nigritum as applied to a Geoglossum is based on a bull. Persoon described a Clavaria under this name to which Fries referred a Geoglossum. I have seen the specimen in Fries' herbarium, and, to the eye, it is an evident Geoglossum, and Fries should have known it. Cooke found a Friesian specimen in Berkeley's herbarium, and illustrated it as a Geoglossum, but with not very accurate paraphyses. Peck gave a good, accurate illustration of it, 29th Report, Plate 1, fig. 20-22, and attributed the name to Persoon, which is misleading, in view of the fact that Persoon never so named any Geoglossum.

SPECIMENS.—Massachusetts, Geo. E. Morris; Michigan, C. G. Lloyd.

GEOGLOSSUM PALUDOSUM (Fig. 792).—Plants black, dull to the eye. Fertile portion compressed, not distinctly marked from the stem. Stem black, dry, round, scurfy. Spores mostly subhyaline, 7 to 10 septate, 6 x 70-90 mic. Paraphyses (Fig. 785) pale-colored, septate, with piriform apices.

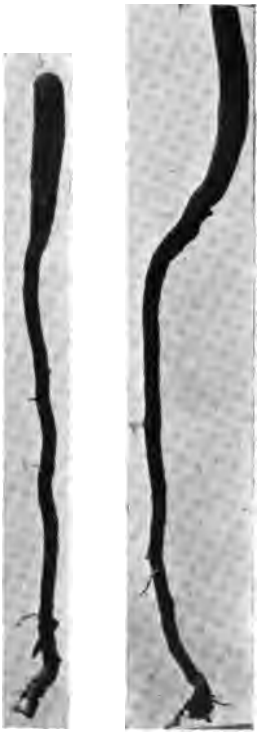

Fig. 792.

This is a rare species, but probably not so rare as would appear from the records. Its characters were first pointed out by Durand. I found it twice in Sweden at Upsala and at Femsjö, and it is the only black, smooth Geoglossum I did collect in Sweden. Fries no doubt referred it to Geoglossum glabrum, as any one else would do without the microscope.

It grew in short, mossy grass. None of the Europeans have ever noted it. Its character is the pale-colored spores, almost subhyaline under high power. Durand states that they are only slow in ripening and become dark. The spores in mass are white to the eye when thrown down on a glass, and only faintly colored under the microscope. Durand demonstrated, from his own investigation, that the plant should be called Geoglossum paludosum, as named by Persoon, and then on the testimony of another, of no value to me, uses another name for it, Geoglossum fallax. The Swedish plant does not appear to be exactly the same as the American. In the Swedish plant I have never found any spores so dark that they could be well called fuliginous. The paraphyses are pale-colored and hardly circinate.

SPECIMENS.—Sweden, Erik Haglund, C. G. Lloyd (two collections).

GEOGLOSSUM PYGMAEUM is based on an old collection of two specimens in Peck's herbarium. It is similar to Geoglossum glabrum, but with 15 instead of 7 septate spores.

The following three rare species are very close to each other, and are separated as a group in Durand's paper, on account of having the tops of the paraphyses agglutinate, forming an epithecium. They are all unknown to me.

GEOGLOSSUM COHAERENS.—"Known only from the type locality," viz., Ellis' dooryard at Newfield, New Jersey. Has paraphyses with piriform, brown apices and pale colored 7 septate spores.

GEOGLOSSUM INTERMEDIUM is close to Geoglossum paludosum in its pale 7-11 septate spores, but differs in having an epithecium. Durand records two collections, New York and Canada.

GEOGLOSSUM ALVEOLATUM is very similar to above with 15 septate spores. Durand reports a number of collections, all from the same region in New York. It was originally named Mitrula alveolata, "the name Mitrula being used

in the sense of Massee's monograph." That is not strictly accurate, for in the aforesaid "monograph" the name Mitrula was applied (or rather misapplied) to hyaline spores only.

HIRSUTE, BLACK GEOGLOSSUMS.

These species are readily known to the eye from the hirsute surface, particularly the stems. Microscopically, they are much alike, and the species are based chiefly on spore septation. The paraphyses (Fig. 786) are all similar, viz., brownish, thickened and curved at the apex. They have spines (setae) in the hymenium, and on that account form a genus for some writers.

GEOGLOSSUM HIRSUTUM (Fig. 793).—Plants black, dry, strongly hirsute, with straight, black hairs. Fertile portion compressed, elliptical. Stem slender, hirsute, three or four times as long as the length of the fertile portion. Spores 120-160 mic. long, 15 septate, tapering to both ends. Paraphyses (Fig. 786) brown, septate, with slightly thickened, curved apices. Setae one-third longer than the asci.

Fig. 793.

This is the most common and widespread of all Geoglossums, not only in Europe and the United States, but is one of the few specimens known from other countries, Australia, Java, West Indies, India, etc. It is readily known at sight by its slender stem and strongly hirsute surface.

ILLUSTRATIONS.—Many have been given, and are fairly accurate. Holm (as Clavaria ophioglossoides), Greville, t. 185, Sowerby, t. 83, Cooke, fig. 3, Gillet, etc.

SPECIMENS.—Massachusetts, Geo. E. Morris, T. L. Smith; Pennsylvania, Dr. Herbst; Minnesota, Miss Daisy Hone, Dr. M. S. Whetstone; New Jersey, E. B. Sterling; Michigan, C. G. Lloyd; England, C. Crossland; India, Wm. Gollan. A very slender form with short setae.

GEOGLOSSUM CAPITATUM (Fig. 794).—Plants black, hirsute. Stem 3-4 cm. long, slender. Fertile portion abruptly inflated, capitate, globose, as broad as long. Spores, paraphyses and setae as in the type form.

While there is no doubt that this is only a form of Geoglossum hirsutum, it is an exception as to shape and occurrence. We have twenty collections of G. hirsutum, and not a specimen among them that approximates it. Though sometimes the heads are short in the type form, they are not abruptly swollen as in this. It may be just a freak. Persoon named it and based the name on Schmiedel's figures t. 25 in part, and the figures he cites are nearer to the usual Geoglossum hirsutum than to this.

SPECIMENS.—A single collection (fig. 794) from Wm. C. Stevenson, Harvey's Lake, Pa.

Fig. 794.

GEOGLOSSUM VELUTIPES.—Plants black, dry, same shape as Geoglossum hirsutum. Fertile portion smoother to eye. Stem velutinate, velvety rather than hirsute. Spores 8-11 septate, 120-160 mic. long. Paraphyses as in the subsection. Setae not much longer than the asci, hence heads appear smoother than those of G. hirsutum.

An American plant only as far as known, held by the English writers as only a variety of Geoglossum hirsutum. It is very close. The spores have fewer septa, and the whole plant is not so strongly hirsute. Durand finds it to be the only species with only four spores in each ascus, and for him it is a strongly distinct species.

GEOGLOSSUM WALTERI.—This differs from other species in this section in having spores regularly 7 septate, and 80 to 110 mic. long. It was originally from Australia, and the American plant is doubtfully same. I have but one collection that I have so referred, and that with much doubt. It is from Miss Mary Fitzgerald, North Carolina. The spores agree, excepting they are longer, 120-130 mic. The setae are not much longer than the asci. The grosser features of the collection do not seem to be the same as the description. It is a short plant, with flattened, hirsute, fertile portion merging into a very short, thick stem.

GEOGLOSSUM FARLOWII.—The plant, to the eye, is very much the same as the preceding species. Its specific distinction rests on the spores, which are shorter, usually 60 to 75 mic. long, and usually 3 septate, rarely 5. It was named by Cooke on the 3-septate character. Massee claims this character is "fallacious," but Durand holds it as constant in its spores. It is reported fairly common, but I have no specimens that I can refer to it.

SPATHULARIA.

Plants stipitate, compressed, spathulate. Fertile portion strongly distinct from the stem, decurrent on opposite sides of the stem. Spores filiform, multinucleate.

SPATHULARIA FLAVIDA (Fig. 795).—Plants pale yellow, the stem paler or white. Fertile portion even, wavy or rugulose, strongly distinct from the stem and decurrent. Spores filiform, about 45 mic. long, hyaline, multiguttulate. Paraphyses hyaline, filiform, curved at the apex.

Fig. 795.

A quite common species in the pine woods of our northern States, readily known by its peculiar shape. Our figure (795) tells the whole story. It extends across the continent, but appears absent from the South. I never found it in Sweden, but Romell got it abundantly from the extreme north of Sweden. In drying, the fertile portion turns reddish brown, but the stem remains pale. I have one collection only, where the head has remained yellow. The plant appears as though it had a thick hymenium attached to the stem, but a section shows that the stem flattens and broadens above, and bears a thin hymenium on the upper portion and extending down the sides. The plant was named by Persoon, Spathularia flavida, and bore the name universally for a hundred years, until Saccardo got busy with a date dictionary and juggled it to Spathularia clavata. Most of the very recent writers have used Saccardo's juggle.

ILLUSTRATIONS.—It has been figured and well figured many times. Saccardo cites over thirty figures, two thirds of them under the usual name, Spathularia flavida.

SPECIMENS.—Vermont, Mrs. A. M. Hadley, D. B. Griffin; Idaho, James R. Weir; Pennsylvania, Mrs. Geo. M. Dallas; Minnesota, Miss Daisy Hone, Dr. M. S. Whetstone; Massachusetts, Geo. E. Morris; Quebec, Isabel M. Walker; Michigan, C. G. Lloyd.

SPATHULARIA RUFA.—This is quite close to the preceding species in size, shape, and microscopic details, but differs in color, having more brownish yellow fertile portion and particularly darker stems. The spores of my specimens are about the same in both species. It is not easy to distinguish when dry, as the fertile portion of both species dried are about the same color, but Spathularia rufa dried has darker stems than S. flavida.

Farlow seems to have been the first to have collected it in the United States. He found it abundantly on mossy logs in New England, and sent specimens to Kew, which were named by Cooke Spathularia velutipes. It was not well named, for the stem is hardly velutinate. I have no doubt but that it is the same plant as Spathularia rufa of Europe. Durand tells us it differs by shorter spores, but he does not state whose spore record he takes for Spathularia rufa. Cooke and Massee give the spores of both species about the same length, and Durand states those of S. flavida are given much too long. Why not the other? Gillet does not give measurements, but shows both of the same length on his figures. I would have to possess more evidence than that before I would hold the American and European plants as different.

SPECIMENS.—Quebec, Isabel M. Walker; Toronto, Thos. Langton; Cleveland, H. C. Beardslee.

SPATHULARIA NEESII.—Very close to Spathularia flavida, said to be distinguished by having longer spores 60-80 mic., which are involved in a mucilaginous layer appearing 4 mic. thick. I have specimens from Miss Hone, Minneapolis, so labeled and confirmed by Bresadola. Miss Hone does not include the species in her paper, and I cannot distinguish the dried specimens from S. flavida.

2ND DIVISION, LEOTIEAE. HEADS CAPITATE.

MITRULA.

The genus Mitrula was originally based on the capitate form of the pileus, which is distinct from the stem. In recent works an attempt was made to modify it on spore characters to include clavate species that were originally, mostly, and I think better, referred to Geoglossum. Spores are short, cylindrical, narrowly elliptical or fusiform.

MITRULA PALUDOSA (Fig. 796).—Pileus bright yellow, obovate, hollow when old, soft, fleshy or subtremellose. Stem white, smooth, hollow, slightly viscid when fresh. Spores hyaline, short, cylindrical, 2½ x 16 mic. Paraphyses slender, filiform, subhyaline or pale colored.

Fig. 796.

This is a spring plant, growing usually gregarious over decaying leaves in swamps and wet places in the woods. When fresh it is a pretty thing, the bright yellow head contrasting with the white stem. When dried it takes on brown color, both head and stem, and the heads, which are round when fresh, become flattened. It was called Mitrula paludosa by Fries from its habit of growing in swamps, and under this name has been included in most European works. It is called Mitrula phalloides by some writers.

ILLUSTRATIONS.—It has been figured many times. Boudier, t. 427, Gillet, t. 27, Massee, fig. 69, are all well colored. Cooke, fig. 175, and the original Bulliard, t. 463, f. 3, are well drawn, but badly colored. Our figure 796 is reproduced from Gillet.

SPECIMENS.—New York, W. H. Ballou; Massachusetts, Theo. L. Smith.

MITRULA CUCULLATA (Fig. 797).—Pileus fleshy, ovate, elliptical or conical, cream color to yellowish ochraceous, distinct from the stem. Stem slender, yellowish brown, pruinose. Spores narrowly fusiform, 2-3 x 13-16, hyaline. Paraphyses brownish, thickened upward, septate.

A very small species which occurs in the fall, growing over acerous leaves. Owing, no doubt, to its small size, it is not often collected and we have no specimens. We reproduce an illustration from Gillet.

Fig. 797.

MITRULA GRACILIS is a very small and a very rare species, growing attached to the stems of moss, and found only in extremely northern localities. Mitrula muscicola as named by Hennings is without doubt the same thing and a better name. There are but few American records of this little plant, all from Canada.

LEOTIA.

The species of the typical Leotia are easily known from their shape and gelatinous nature. Our figure (798) could be taken as representing either of the species, as they differ chiefly in the colors of the stem and pileus. The spores of all are very similar, viz., elliptical-fusiform, 5-6 x 20-28 mic., and afford no marked differences. We have but four species.

LEOTIA LUBRICA (Fig. 798).—Entire plant greenish olivaceous, the head darker than the stem. Stem scurfy with greenish scales. In drying, the whole plant turns darker, but there is not a strong contrast in color in the dried specimens, between the stem and pileus. There is always a greenish cast to the dried stems. Spores 5-6 x 20-28, hyaline, with greenish cast under the microscope. Paraphyses filiform, hyaline.

This seems the most common form both in Europe and the United States, and is the only form that I have collected that I found to be common in Europe. I take it to be the usual European form. It varies some in shade of color, according to environmental conditions.

SPECIMENS.—Florida, G. C. Fisher; Ohio, M. E. Hard; Massachusetts, G. E. Morris, S. Davis, Mrs. E. B. Blackford; Quebec, Isabel M. Walker; Minnesota, Miss Daisy Hone; Sweden, Michigan, Kentucky and West Virginia, C. G. Lloyd.

Fig. 798.

LEOTIA MARCIDA.—Head greenish olive, darker in drying. Stem yellow, almost smooth, slightly scurfy. Spores 6 x 24, usually guttulate, hyaline with greenish cast. Paraphyses filiform, thickened at apex, subhyaline with greenish cast.

This plant differs from the preceding in having a yellow stem

in contrast to the greenish olive head. It is held by some to be a variety of Leotia lubrica, but appears easy to distinguish even in dried specimens. The dried plants are more like those of Leotia chlorocephala than Leotia lubrica, but on soaking them, the much paler pileus readily distinguishes it from Leotia chlorocephala. It is fairly common in the United States, rarer in Europe. It was called Leotia punctipes by Peck, Leotia chlorocephala var. Lloydii by Rehm, Leotia lubrica var. Lloydii by Durand. It occurs in Europe and was named Leotia marcida by Persoon a hundred years ago, hence I do not see any need of any "Lloydii's" in connection with it.

SPECIMENS.—New Jersey, E. B. Sterling; North Carolina, Miss Mary Fitzgerald; Minnesota, Dr. Mary S. Whetstone; Pennsylvania, Capt. McIlvaine; Sweden, C. G. Lloyd.

LEOTIA CHLOROCEPHALA.—Head deep green when fresh. Stipe white or yellow, but never any cast of green. Spores 6 x 24, opaque, with greenish cast. Paraphyses filiform, pale green, deep green in mass.

This is said to be the most common species in the South, and is absent from Europe. The dried specimens are very similar to the preceding species, but can be distinguished by the deeper green of the head, especially when soaked. A piece of the pileus mashed is of an intense green under the cover glass. The stems in all my dried collections are yellow, but in the South Prof. Durand found them mostly white.

There is no question in my mind that it was Leotia chlorocephala of Schweinitz which came from the section where this is "common." The name is appropriate to it, and it cannot be anything else in Schweinitz' account. The name has been applied to the next species on the strength of specimens in Schweinitz' herbarium, but the name is meaningless as so applied, and the evidence of Schweinitz' herbarium is not always conclusive. Either Schweinitz, or those who arranged the herbarium got dried plants confused. It is "Leotia stipitata" of those who would perpetuate an old delusion that it was a "stipitate Tremella." As applied as a distinctive, specific name to a Leotia (all of which are stipitate) it is not logical, as Fries no doubt thought when he changed it to Leotia viscosa. But there is no question that it is the species figured and described by Bosc in 1811.

SPECIMENS.—Massachusetts, Mrs. E. B. Blackford, Geo. E. Morris; Minnesota, Dr. M. S. Whetstone; Maryland, W. T. Lakin.

LEOTIA ATROVIRENS (Fig. 799).—Both the head and stem are of an intensely green color, the latter strongly squamulose. Spores 5-6 x 18-20 hyaline, with a green cast. Paraphyses branched, thickened above, green.

Fig. 799.

This is a rather rare species, growing often with Geoglossum viride, which is similar in color, but different in shape. The American plant is held to be not the same as the European species, because the paraphyses are not so thickened in the European specimen. This is the only difference, and the distinction is too fine. It is called Leotia chlorocephala in Durand's paper, based on evidence in Schweinitz' herbarium, more positive than

probable. Being the only Leotia with both pileus and stem dark green, there should be no trouble in identifying it. It is beautifully illustrated by Boudier, and we reproduce his figure. The scales on the stem, so prominent in his figure, mostly disappear in dried specimens.

SPECIMENS.—We have but one collection from Prof. A. Yasuda, Japan.

CUDONIA.

This genus has the same general shape as the preceding. The context is fleshy (not gelatinous), and firmer. The spores are also markedly different, being long and filiform.

CUDONIA CIRCINANS (Fig. 800).—Plants gregarious, often growing in the moss in circles. Pileus reddish brown, stem fleshy, brown, darker than the pileus. Spores hyaline, filiform, 2 x 30-45 mic. Paraphyses hyaline, filiform, strongly curved above.

This is the most common species of Cudonia in the moss in the woods of Sweden, where I have collected it abundantly. It usually grows in pine woods. Durand reports it from several of the northern and eastern States, growing in rotten wood or humus among leaves, often under coniferous trees. I have only one American collection, from James R. Weir, Idaho.

Fig. 800.

CUDONIA LUTEA.—This, which is evidently close and probably a form of the preceding, is held to be different by Durand, on account of the more yellow color and longer spores, which are 2 x 45-65 mic. It grows over the same region (northern and eastern States). It was discovered to be a new species under the name Vibrissea lutea.

CUDONIA OCHROLEUCA.—This is a little known and doubtful plant ("type locality" California), claimed to be tremulous (gelatinous) and to have yellow heads and white stems, none of which claims are said to be borne out by the specimens. It has shorter spores (2 x 18-25), which is the only real difference on which the species rests, from the scanty knowledge we have of it.

FOREIGN SPECIES.

Very few plants of this nature have come in to us, as our foreign correspondents have not yet gotten into the habit of picking them up. The following three species from Japan are different from our American species.

CUDONIA JAPONICA (Fig. 801).—Fruchtkorper 25-6 cm. hoch; Hut *flach*; am Rande eingerollt, 1-2.5 cm. breit, oberseite *braun*, glatt, unterseite blass mit Radialfalten; Stiel *blass*, hohl, oft zusammen gedruckt, oben mit längsfalten, zottig, 2.2-5.5 cm. lang, 2-5 mm. dick. Ascus 150-170 x 12-14, keulenförmig. Sporen nadelförmig, 70-80 x 2 farblos; Paraphysen fadenförmig.

We present the above name and description as sent us by Prof. A. Yasuda. The specimen is very similar to Cudonia circinans, same color and texture when dried. The pilei are twice as broad and when

Fig. 801.

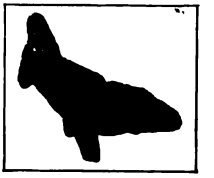

Fig. 802.

soaked (Fig. 802) have the surface corrugated. The spores, as noted by Prof. Yasuda, are twice the length of those of Cudonia circinans. I measure them about 20 mic. longer than Prof. Yasuda.

SPECIMENS.—Types (No. 283) from A. Yasuda, Japan.

CUDONIA ORIENTALIS.—Pileus 6-8 mm. in diameter, fleshy, pale brown, with incurved margin. Stipe slender, concolorous, dark blackish in drying. Spores in ascus pale straw color. Paraphyses filiform, hyaline.

When received this was referred to Cudonia circinans, but the dried specimens are a different color with dark, almost black stems. When soaked out the head is clay color, with no shade of red. I found no free spores, but in the ascus they appear to be about 50 mic. long. I am sure it is not an American species, and it does not appear to be European.

HEADS CAPITATE.

CUDONIA CONVOLUTA (Figs. 803-805).—Pilei fleshy, hemispherical, inflated, convolute, 5-6 mm. in diameter. Stem 2-3 cm. long, tapering upward, striate, concolorous with pileus. Spores 25-30 mic. long, clavate-filiform. Paraphyses hyaline, filiform, not thickened at apex.

Fig. 803.

Fig. 804.

Fig. 805.

Intermediate between Cudonia and Mitrula, it has the texture, spores and habits of the former, and the hemispherical head of the latter. Hence, on the usual definition of a Cudonia, it can not be entered in the genus, but notwithstanding, it is much closer to Cudonia than Mitrula, where one would class it from a book description. The color is pale brownish, with no hint of reddish. It grew clustered and a single cluster was sent me with the preceding species.

SPECIMENS.—Type from A. Yasuda, Japan.

ILLUSTRATION.—Fig. 803, natural size, a cluster of dried plants; Fig. 804, the same soaked out; also Fig. 805, a head enlarged six diameters.

VIBRISSEA.

Pileus lignotile, subgelatinous, globose or convex, stipitate, in general shape resembling the type form of Leotia. Spores slender, filiform, hyaline. This is an aquatic or semi-aquatic section, usually growing on wood immersed in water. They reach the best development under the water. The long spores often project and remain attached to the hymenium, giving it a silky appearance, and waving to and fro, hence the name (to vibrate).

VIBRISSEA TRUNCORUM (Fig. 806).—Pileus convex, globose, deep yellow. Stem bluish grey, one-quarter to one-half inch long, terete. Spores slender, filiform, 1 x 200-250 multiseptate, arranged in bundles in the asci. Paraphyses slender, slightly thickened above, with yellow tips.

Fig. 806.

This is the leading, if not the only species of the section Vibrissea both in Europe and the United States. With us it occurs chiefly in the mountainous region of our Eastern States. It grows in the cold mountain brooks, and Dr. Farlow reports it as common in the White Mountains. It is generally found in the water. Peck named a variety with a white stem "var. albipes," which Durand unites with the type. Vibrissea Margarita, from Scotland, seems, from Phillips' figure, to be the same as Vibrissea truncorum.

VIBRISSEA FOLIORUM.—This, known only from a collection at Harvard, grew on dead oak leaves in a wet place. In its grosser characters it agrees with the preceding, and differs only in having shorter spores, 1 x 85-100 mic. It is probably best held as a form of the preceding.

APOSTEMIDIUM.

This has a sessile pileus, and in our older works was classed in the Pezizeae. The structure of the head and habits of the plant are the same as those of Vibrissea. We include it from its relationship, though these little Peziza-like plants have never been studied by me. All species are very small, sessile plants and, excepting in "structure" and habits, have little resemblance to this section.

APOSTEMIDIUM GUERNISACI (Fig. 807).—Plants turbinate, 1-4 mm. in diameter, sessile, pale bluish yellow, brownish below. Spores filiform, 200-250 mic. long, multiseptate. Paraphyses filiform, hyaline, longer than the asci, and forked at the apex.

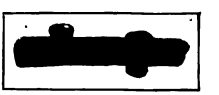

Fig. 807

Growing on sticks and wood in water, both in Europe and the United States.

APOSTEMIDIUM LEPTOSPORUM.—Plants sessile, turbinate, 2-3 mm. in diameter. Color pale bluish yellow, brownish at the base. Spores filiform, hyaline, 250 mic., multiseptate. Paraphyses filiform, not longer than the asci, colored and slightly thickened at the apex, simple or rarely branched.

This little species is close to the preceding, differing materially only in the paraphyses. It was called Vibrissea turbinata by Phillips, and afterwards so referred by Peck, who originally published it as Helotium vibrisseoides. It appears to me, from Durand's and Phillips' accounts, that while they do not so definitely state, they both really thought that but one species was involved in the three names.

NAME SHUFFLING OF THE GEOGLOSSUMS.

The "science" of mycology has become in late years a mere shifting around of names. The only advantage is that it produces a host of "new combinations," to which the shufflers invariably add their own, thus having the gratification of seeing their names in print. If those who are so prolific in inventing new names in classification would occasionally propose some new ideas, it would vary the monotony of the proceedings. The genus Geoglossum was early proposed by Persoon, who defined it as being club-shape plants with the spores in asci. It was a stroke of genius for Persoon to discover this with the crude lens at his service. The Persoonian idea of the genus was accepted and followed for about eighty years. In the meantime it was found out, of course, that some Geoglossums were black and some were yellow, brown and even green. That some had hyaline and some colored spores. And some had hairs growing on them. Most of this Persoon knew, and what he did not know was soon learned when the microscope came into use. After it had become a matter of common knowledge the new genus discoverers began to appear and propose new names. We give a summary of these discoveries, and if you will analyze them, you will find precious little that has not been known since the days of Persoon.

CORYNETES, Durand.—Geoglossums dark, but not black, with hyaline spores. Attributed to Hazslinszky, but I have not looked him up, and could not read him if I did.

GEOGLOSSUM, Boudier.—Only those species that are black, bald, and have dark spores.

GEOGLOSSUM, Durand.—Geoglossums that are black, bald, not sticky, and have dark spores. Durand attributed it to Persoon and was generous enough to apply it to *one* of his species. Had he applied it to them all it would have been better.

GEOGLOSSUM, Gillet.—Geoglossums with septate spores, without regard to color, color of spores, or previous condition, or the fact that all Geoglossum spores are said to be septate in the decrepit ages.

GEOGLOSSUM, Saccardo.—Black Geoglossums with dark spores, whether bald or hairy.

GLOEOGLOSSUM, Durand.—Black Geoglossums that are sticky. The name is so close to Geoglossum that the "genus" is as confusing as it is unnecessary.

HEYDERIA, Boudier.—Proposed substitute for Mitrula because its spores are not septate. I suppose if Mitrula had septate spores it would have been called something else on that account.

LEPTOGLOSSUM, Boudier.—Geoglossums with hyaline, septate spores. As septation is a sign of senility, and rarely seen in a normal, healthy hyaline spore, it is a fine character on which to base a genus.

LEPTOGLOSSUM, Saccardo.—Geoglossums with long hyaline spores, without regard to color or previous condition of bondage. The name is attributed to Cooke, but not justly, for Cooke used it legitimately, as a section of Geoglossum and not as a name juggle.

MICROGLOSSUM, Boudier.—Geoglossums with hyaline non-septate spores. As all Geoglossums with hyaline spores are non-septate, as usually seen, it is a good character for a genus.

MICROGLOSSUM, Gillet.—Geoglossums with simple spores, without regard to color, either of spores or plants. It is said that none have simple spores, but little discrepancies of this kind do not count when it comes to name juggles.

MICROGLOSSUM, Saccardo.—Geoglossums with short hyaline spores, without distinction as to light or dark colors.

MITRULA.—Applied by Massee in a distorted sense to Geoglossums with hyaline spores. Exactly the same as Saccardo has done before, only Saccardo called it Microglossum. To misdefine the character of an old genus is more to be condemned than the usual ruse of discovering the old section to be "new genera."

THUEMENIDIUM, Kuntze.—A rejuggle by the illustrious Otto Kuntze of Microglossum, because the latter was previously used for a bug or a flowering plant or something. As Otto Kuntze would not have known a Geoglossum from a stick of licorice, he was most eminently qualified to juggle its names.

TRICHOGLOSSUM, Boudier.—Geoglossums with brown spores and hairs. They are all black plants. It is a pity they did not find some pale, hairy Geoglossums, so they could make some more "new genera."

XANTHOGLOSSUM, Kuntze.—Another juggle on the order of Thuemenidium, and of about as much merit.

SYNONYMS.

There are about 200 synonyms given in Durand's paper for 42 species of Geoglossaceae. We reproduce only a few, for most of them are mere shifting of the species into the "new genera" formed by breaking up the genus Geoglossum, or shuffling them from one to the other. As we have given above our ideas of the merits (or demerits) of this method of name confusions, it is not worth the space to itemize the names in detail.

Not having investigated the historical specimens in the museums, we have in practically all cases followed the conclusions reached by Durand, who we know has gone into it very accurately and carefully. The few instances where we differ are principally questions of policy, as using the name Geoglossum rufum for a yellow plant, or questions of mere date dictionary juggling, as Spathularia clavata for Spathularia flavida.

Geoglossum album, United States, Johnson (compiled in Saccardo as Mitrula Johnsonii, juggled by Underwood to Microglossum album, and by Massee to Mitrula alba), is unknown, and nothing like the "description" is known. Give an amateur a little scattering knowledge of "old genera," and the wonderful "new species" he will discover in "science" are only comparable to the discovery of Barnum's wild man of Borneo.

Geoglossum alabamense (Underwood as Leptoglossum) = Geoglossum viride.
Geoglossum Americanum, Cooke = Geoglossum velutipes.
Geoglossum contortum, Peck (as Microglossum) = Geoglossum olivaceum.
Geoglossum difforme, Cooke, Massee, etc. (not Fries) = Geoglossum glabrum.
Geoglossum elegans = Mitrula phalloides (?). See page 7.
Geoglossum fallax, Europe, Durand = Geoglossum paludosum.
Geoglossum farinaceum, United States, Schweinitz. Type missing, and nothing known about it.
Geoglossum latum, Peck, = Geoglossum arenarium.
Geoglossum luteum var. fumosum, = Geoglossum fumosum.
Geoglossum microsporum, Peck, = Geoglossum atropurpureum.
Geoglossum obscurum, Peck (as Microglossum), = Geoglossum olivaceum.

Geoglossum ophioglossoides, Saccardo, = a juggle for Geoglossum glabrum. Linnaeus, who did not know one black species of Geoglossum from another, nor from a black Cordyceps, for that matter, proposed the name Clavaria ophioglossoides for an old figure that he found in Vaillant. The ancient mycologists took the name to represent three plants, Geoglossum glabrum, Geoglossum hirsutum and Cordyceps ophioglossoides, as straightened out by Persoon, and kept straight for eighty years until Saccardo proposed this juggle.

Geoglossum Peckianum, United States, Cooke, = G. difforme. Peck misreferred this to Geoglossum glutinosum 25th Rep., p. 97, and Cooke misreferred it to Geoglossum glabrum, which Peck had misreferred to Geoglossum simile. "Geoglossum Peckianum Cooke" therefore seems to be a monument erected in honor of the fact that both Cooke and Peck got both species wrong.

Geoglossum pistillare, Cooke, = Geoglossum luteum.

Geoglossum purpurascens, Europe, Persoon. This was the original name by Persoon based on Holm's figure. Afterwards he concluded that Batsch's crude figure as Clavaria atropurpurea was the plant, and he adopted this specific name, and so labeled his specimens. He was probably mistaken as to that, but the plant became established in European mycology as Geoglossum atropurpureum, and it is not advisable to try to change it on an ancient interpretation of an old and evidently very inaccurate figure. Durand considers it distinct from atropurpureum, differing in slightly thicker apices of the paraphyses. It is a hair-splitting distinction. Besides, it is misleading to quote both species on the authority of Persoon, for Persoon always held them as being synonyms of one species.

Geoglossum Rehmianum Brazil, Hennings (which is probably the same as Geoglossum Walteri), is reported doubtfully in the United States on one collection.

Geoglossum rufum, United States, Schweinitz, = Geoglossum luteum. It was dug up by Massee and used as a juggle for Geoglossum luteum. As he further juggled it into Mitrula, no one would probably ever have noticed it if Durand had not attempted to further perpetuate this nonsense.

Geoglossum simile, United States, Peck, = Geoglossum glabrum.
Geoglossum tremellosum, Cooke, = Geoglossum atropurpureum.
Geoglossum vitellinum, Europe, Bresadola, = Geoglossum irregulare.

Helotium vibrisseoides, Peck, = Apostemidium leptosporum.
Leotia chlorocephala var. Lloydii, United States, Rehm, = Leotia marcida.
Leotia chlorocephala, Durand, but probably not Schweinitz, = Leotia atrovirens.
Leotia exigua, United States, Schweinitz. Unknown, and no type preserved.
Leotia lubrica var. Lloydii, United States, Durand, = Leotia marcida.
Leotia punctipes, United States, Peck, = Leotia marcida.
Leotia stipitata Bosc. (as Tremella), = Leotia chlorocephala.
Leotia viscosa, Fries, = Leotia chlorocephala.
Mitrula crispata, United States, Berkeley, = Geoglossum irregulare.
Mitrula inflata, United States, Fries (or rather Schweinitz) is not a Discomycetes, but belongs to the Clavariaceae (cfr. Myc. Notes, Old Species Series, page 4), and is now known as Physalacria inflata. Cooke drew an imaginary picture of it (Micrographia, t. 344) that has not as much resemblance to it as it has to a hog bladder, and called it Spathularia inflata.
Mitrula laricina, Villers (as Helvella), old name alleged to be same as Mitrula paludosa, and used by Massee as a juggle.
Mitrula luteola, United States, Ellis, = Geoglossum irregulare.
Mitrula muscicola, Europe, Hennings, = Mitrula gracilis probably (cfr. page 15).
Mitrula phalloides, Fries, = Mitrula paludosa. The name phalloides was changed by Fries very much for the better to paludosa when he proposed the genus Mitrula. It has until recent years been generally used.
Mitrula roseola, United States, Morgan. Prof. Morgan told me he was very much chagrined when he learned that this "new species" was a lichen.
Spathularia clavata Saccardo = a juggle for Spathularia flavida after the plant had been universally so shown for a hundred years. Since the appearance of Saccardo (Vol. 8), writers (Durand, Massee, etc.) have used Saccardo's juggle, but I see no merit nor occasion for it; as the plant had a good, appropriate and well-established name.
Spathularia inflata, Cooke. See Mitrula inflata.
Spathularia linguata, United States, Johnson, is apparently a similar species to Geoglossum album and Barnum's wild man of Borneo.
Spathularia velutipes, United States, Cooke, = Spathularia rufa, as far as anyone knows.
Sprageola Americana, United States, Massee based on a sessile specimen of Geoglossum irregulare.
Vibrissea lutea, Peck, = Cudonia lutea.
Vibrissea Margarita, Europe, Phillips, = Vibrissea truncorum.
Vibrissea turbinata, Phillips, = Apostemidium leptosporum.

MYCOLOGICAL NOTES

And Other Publications Issued by C. G. Lloyd.

SUBSCRIPTION PRICE.—A little personal interest on the part of the recipient in picking up and sending to my address, specimens of the larger fungi. All are desired excepting specimens of fleshy Agarics. Simply dry the specimens and send them in.

The following publications comprise those that have been issued to date. We cannot supply sets of back numbers, but are often able to furnish a few missing numbers to complete sets.

Vol. 1. Mycological Notes, Nos. 1-18, 1898-1904.
A compilation of the Volvae of the United States, 1898.
The Genera of Gastromycetes, 1902.
The Geastrae, 1902.
The Lycoperdaceae of Australia and New Zealand, 1905.
Notes on the Amanitas of the Southern Appalachians (by H. T. Beardslee), 1902.
Letters Nos. 1, 2, and 3, 1904.
Plates, 1-39.

Vol. 2. Index, Vol. 2.
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SYNOPSIS

OF

SOME GENERA

OF THE

LARGE PYRENOMYCETES

CAMILLEA
THAMNOMYCES
ENGLEROMYCES

By

C. G. LLOYD

CINCINNATI, OHIO, - JANUARY, 1917

THE GENUS CAMILLEA.

The receipt of a nice specimen of Camillea Cyclops from Rev. Torrend, Brazil, has induced us to work over the similar species in our collection. On our last visit to Europe we photographed the various specimens we found in the museums, but did not study them as to structure. However, they make such characteristic photographs that we believe the known species can be determined from our figures.

We are all familiar with the common Hypoxylons that form little globose, black balls, usually on dead limbs, in our own woods. They have a solid carbonous interior with the perithecia imbedded near the surface. There have been over two hundred alleged Hypoxylons, mostly from the tropics. We have never worked them over, but suspect that a number of them from the tropics, when examined, will be found to be Camilleas. If the specimens were examined, no doubt "prior" specific names would be found for several of this list.*

In the old days all similar carbonous fungi were called Sphaeria. Montagne first received a section of Sphaeria with cylindrical form, from South America. The perithecia were long, cylindrical, and were arranged in a circle or were contiguous, near the summit of the stroma. He proposed to call it Bacillaria, as a section of Sphaeria, but the name being preoccupied, he, at the suggestion of Fries, afterwards named it in honor of himself, Camillea, Montagne's first name being Camille.

The original species were separated into a genus by Montagne in 1855, and five species listed, and it is a curious fact that these five species, as well as all others that have since been added, are of the American tropics. I have not worked over the "Hypoxylons" in the museums, but as far as the records go the genus Camillea does not occur in other tropical countries.

In 1845 Léveillé announced that he had discovered a plant resembling an Hypoxylon which had, however, the spores borne on filaments (acrogenous), and not in perithecia. He called it Phylacia globosa, and classified it in Sphaerioidaea. The specimen (Fig. 847) is still at Paris. Saccardo has omitted it, and states that Phylacia is probably a pycnidial condition of Hypoxylon turbinatum. Both were guesses, one statement surely, and both probably, wrong. The interior is filled with a powder that under the microscope appears to be made up of ligneous filaments mixed with a few spores. These filaments appear to me to be the disintegrated walls of the perithecia, and not the "filaments that bear the spores." From analogy, at any rate, the spores of all these similar species are probably borne in asci which disappear early, and Phylacia seems to be the same genus as Camillea, the walls of the perithecia disintegrating and forming a powdery mass. If this view is correct, Camillea can be divided into two sections.

EUCAMILLEA.—Perithecia persistent.

PHYLACIA.—Perithecia early disintegrated.

* Thus there is no doubt whatever in my mind that Camillea turbinata is Sphaeria caelata of Fries, but not knowing the Friesian species from specimens, I take the only sure name I know. Montagne refers it to Camillea poculiformis, but I do not think he knew more about it than I do, and I do not know anything excepting the "description."

SECTION 1. EUCAMILLEA.

CAMILLEA LEPRIEURII (Fig. 826).—Carbonous, black, cylindrical, 2-3 cm. long, 3-4 mm. thick. Apex truncate, excavate. Perithecia linear, near apex of stroma. Asci (teste Montagne) linear, 8 spored. Spores (pale) spindle shape, dark, 6-7 x 25-35 mic.

Fig. 826.

A most peculiar and apparently a rare species. All the specimens I have noted came to Montagne from Leprieur, French Guiana. Berkeley records it from Brazil, Spruce, but I think it has not been collected in recent years. Our figure 826 is from specimens in Montagne's herbarium, and these are three times as long as the specimen Montagne pictures. I saw no such short specimens. Patouillard has given a detailed account of the structure of the plant. The perithecia are arranged in a circle near the apex of the stroma. The spores are spindle shaped (rather than caudate, as Montagne shows them) and 25 to 35 mic long. Patouillard claims that Hypoxylon melanaspis has same spores and structure, and is the pulvinate form of Camillea Leprieurii. It does not seem possible to me, but I can not say to the contrary.

CAMILLEA BACILLUM (Fig. 827).—Stroma cylindrical, black, 1 cm. long, 1 mm. thick. Apex truncate, shown punctulate in Montagne's drawing. Spores dark, reniform.

Fig. 827.

This is very similar to the preceding in shape, but is a much smaller species with different spores (teste Montagne). We have only seen the originals in Montagne's herbarium, from which our figure is made. The drawing given by Montagne represents the plant better than our photograph. Montagne records the species from Cuba and French Guiana. We think it a very rare plant.

CAMILLEA MUCRONATA (Fig. 828).—Stroma cylindrical, black, 6 mm. long, 3 mm. thick. Apex with a prominent, mucronate point. Perithecia linear, contiguous, near the apex of the plant. Asci cylindrical. Spores oblong (M.) 3½ to 4 x 10 mic., colored.

Fig. 828.

This also is a rare species, only known from the original collection by Leprieur, French Guiana. Our photograph is from the type. In

the original drawing there is a circle of little acute protuberances shown near the apex of the plant. We can see but faint indication of them in our photograph.

CAMILLEA LABELLUM (Fig. 829).—Plant short, cylindrical, about a cm. tall and thick, with a depressed disc. Perithecia contiguous, forming a layer beneath the disc. Spores (M.) fusiform, dark, 30 mic., long.

I believe the plant is only known from the original collection in Montagne's herbarium, from Leprieur, French Guiana. It does not follow, however, that it is such a rare plant, but only that the plants of the region have been scantily collected. Our figure is a photograph of the types.

Fig. 829.

CAMILLEA TURBINATA (Figs. 830-833).—Plants obconic or turbinate, about a cm. tall and broad, growing in a dense cluster from a common, mycelial carbonous base. The summit is truncate, and marked with a raised central disc, which is thin and in old plants breaks irregularly. A section of a young plant (Figs. 831 x 6) shows the lower part composed of rather soft, carbonous tissue, the upper filled with a light brown powder, composed of spores mixed with hyphae tissue. In old plants the tops break in, the powder is dissipated, and there remains (Fig. 833) a bundle of carbonous tubes, the walls of the perithecia. Finally, these break up and disappear, leaving the upper part of the plant hollow. The spores are elliptical, 6-7 x 16-18 mic., smooth, light colored. The asci which disappear at a very early stage, are shown by Moeller as oval, each containing 8 spores.

This is a common plant in our American tropics, and was named by Berkeley, as Hypoxylon turbinatum, but in a later paper he referred it to Camillea turbinata. It is compiled in Saccardo as Hypoxylon. I doubt not but that it was named Sphaeria caelata by Fries many years "prior." Spegazzini found it abundantly, and noting that it was not a good Hypoxylon, puzzled over it in two or three papers and finally also concluded that it was a Camillea. Moeller also "discovered" it, and although the common plant was well known in other centers, the rumors had not reached Berlin, hence he "discovered" it was a new genus, which he dedicated to his friend, Dr. Hennings and called it Henningsinia durissima. Fortunately, he gave a good figure by which his "discovery" could be interpreted.

We have beautiful specimens from Dr. J. Dutra, Brazil, from which our figure was made, also we have specimens from Rev. Rick.

CAMILLEA CYCLOPS.—Plants short, cylindrical, or semiglobose, black, about 4 mm. in diameter, erumpent from a common mycelial origin, and distributed regularly over the matrix. They are produced at intervals of about ½ cm, and apparently never two

Fig. 830.
Camillea turbinata.
(Side view, natural size.)

Fig. 831.
Section with spore mass (X 6).

Fig. 832.
Same, top view.

Fig. 833.
Section after dispersion of spores.

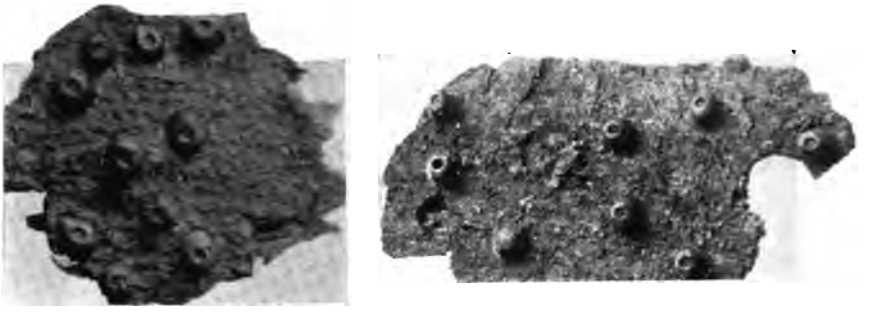

Fig. 834.
Camillea Cyclops.

contiguous. Apex a circular, rounded depression, with a slightly elevated disc. Perithecia arranged in a central bundle, with permanent, carbonous walls (Fig. 835 x 6). Spores oblong, 8 x 12, pale colored.

Fig. 835.

While this is probably not a rare plant in the American tropics, it appears to have been only known from the Leprieur collections sent to Montagne. We have recently gotten it from Rev. Torrend, Brazil, and the receipt of the specimens inspired this pamphlet. I notice on some of these specimens (not all) little protruding points that are similar to those that Montagne shows, near the apex of Camillea mucronata. These appear like abortive surface perithecia, but I do not find any clue to their nature, and I do not know what they are. Cyclops was the name of a giant in mythology that had but one eye in the middle of his forehead. This species has but one "eye," but it is hardly a giant.

In the same paper in which Montagne lists Camillea Cyclops, he names and figures Hypoxylon macromphalum. I can not tell the photograph (Fig. 837) I made of the type from the photograph of Camillea Cyclops. From Montagne's sectional figure, the perithecia are arranged in the same manner, and the two plants are surely cogeneric and, I believe, identical. A close reading of Montagne's description discloses but one point of difference. He records that in Hypoxylon macromphalum the ostioles are prominent, and in a close examination of my photograph, I do note minute points on the disc that are absent from Camillea cyclops. Still I believe they are the same plant.

Fig. 837.

SECTION 2. PHYLACIA.

This might be made a genus, corresponding to Hypoxylon as to stroma, but having the stroma hollow and filled with a pulverulent mass. In reality, I think it is a better Camillea, the perithecia arranged the same way, not permanent, but broken up at an early stage. Of course, it is only an inference. Léveillé states that it has the spores borne on hyphae (acrogenous), but I do not place much value on

Léveillé's statements. Patouillard, after admitting that he saw nothing but this powdery mass, adds "it is probable that the spores were contained in logettes with fugacious walls, of which only the marks on the inner side of the cavity remain." It would have been better if he had stopped there, but he goes on to propose afterwards that Hypoxylon Bomba should be held distinct from Camillea under the name Phylacia, because it presents a form "stylospored" and a form "ascospored." He does not give the reason for the assertion that it is "stylospored," not even citing the uncertain testimony of Léveillé. Phylacia might be held distinct from Camillea on the ground of the powdery mass and the early disappearance of the perithecia and ascus walls. There is nothing new about that. It was done years ago by Fries who called the "genus" Leveilleana, which is a tip for some future name-juggler. All that is really known about its early structure is only from inference, and that inference is contrary to its having been "stylospored."

Fig. 838.

Fig. 839.

Fig. 840.

Camillea Sagraena. Fig. 838, a cluster natural size; Fig. 839, broken specimen as often seen; Fig 840, two long stipe specimens.

CAMILLEA SAGRAENA (Figs. 838-840).—Plants oblong about 3-4 mm., stipitate or substipitate at the base, growing densely caespitose, in patches, black, smooth, the apices usually obscurely mammillate. Stipes usually short, but sometimes 6-8 mm. long, and when growing in clusters, the bases consolidated by a carbonous stroma. Interior of the receptacle in two compartments (Fig. 841 x6), the lower filled with soft tissue, black around the edges, but *white* in the center. The upper compartment filled with a mass of spores mixed with a few fragments of hyphae. Spores narrowly elliptical, 6 x 12, straight, pale colored.

Fig. 841.

In Cuba I made abundant collections of this species. It grew in patches from the thin bark, usually on the branches of a dead tree. I do not know the name of the tree, but I think it was only on one kind, one of the few soft-wood trees of Cuba. Camillea Sagraena is undoubtedly a common species in the American tropics. It has never been well described, and the white tissue of the interior lower half, which is a very rare occurrence in similar black, carbonous plants, has never been noted. A "new genus" might be based on this feature. It is quite fragile and the broken bases as shown (Fig. 839) are often all that remain of it when old. Camillea surinamensis as named by Berkeley from specimens from Surinam, type at Kew, is exactly the same species. Berkeley

does not record it from Cuba, but from Nicaragua, and the specimen is supposed to be illustrated by Ellis in his plate 38. It may have been the plant, but if so, it was so inaccurately drawn that it would never be recognized. In addition to my abundant collections from Cuba, I have a scanty collection also from Cuba from E. B. Sterling.

Fig. 844

Fig. 845

Camillea Bomba. Fig. 844 on bark; Fig. 845 on hard wood.

CAMILLEA BOMBA (Figs. 844, 845).—Plants globose, sessile, 4-6 mm. in diameter, black, smooth, without any disc. Dehiscing by irregular fracture. Stroma hollow on the interior (Fig. 846 x6) filled with a brown powder, composed of spores mixed with abundant hyphae remnants of the perithecia and asci. Spores 6-7 x 10-12, elliptical, pale colored.

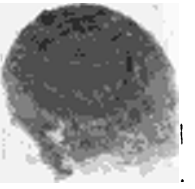

Fig. 846.

This seems to be a frequent species in tropical America. I collected it in Cuba and have specimens from Miss Barrett, Jamaica, and L. J. K. Brace, Bahamas. The latter specimens grew erumpent from thin bark, and the broken bark forms a kind of cup at the base of the stroma. A thin, black mycelial stroma underlies the bark. Those I collected in Cuba were somewhat larger, and more irregular. Some grew in same manner, erumpent from thin bark and the broken bark forms a kind of cup at the base of the stroma, others on the naked, hard wood and grew more compact. In the latter case the black stroma at the base was thicker and more in evidence. There is no question but that Camillea Bomba is cogeneric with Camillea Sagraena, but the gleba of the latter consists almost entirely of spores, while in the former there is considerably more hyphae remnants than spores.

CAMILLEA GLOBOSA (Fig. 847).—Plants densely caespitose, sessile, globose, black, smooth, 7-8 mm. in diameter. Opening by irregular fracture. Stroma hollow, filled with a brown mass of spores and hyphae remnants. Spores elliptical.

Léveillé named this from a specimen from Tolima, Columbia, South America. The type Fig. 847 is all that is known to me. Léveillé spins a long story about it having spores borne on filaments,

merely a wrong deduction, I think, from his having found filaments (of the perithecia walls?) mixed with the spores. Saccardo, who evidently did not take much stock in Léveillé's story, omitted the species, suggesting that it was a form of Camillea turbinata. Saccardo's conclusions were almost as bad as Léveillé's.

Fig. 847.

We have not examined any specimens of Camillea globosa, but suspect a section would show two divisions of the gleba, as in the next. In fact, with the exception of the stipe, it appears to be the same plant, and abundant collections may show them as only sessile and stipitate forms of the same thing.

CAMILLEA POCULIFORMIS (Figs. 848 and 849).—Plants caespitose, stipitate, globose or obovate, smooth, black, 8-15 mm. in

Fig. 848.
Camillea poculiformis.

diameter. Stroma somewhat flattened at apex, opening circumscissally (*) or breaking irregularly. Stipe 8-10 cm. long, 2-3 mm. thick, black. Stroma hollow, the interior in two divisions, a narrow layer above, the fertile portion with a few spores in abundant, hyphae remnants, the lower (corresponding to the sterile base of a Lycoperdon) of matted hyphae. Spores short, elliptical, 9 x 14, pale colored, scantily found.

Fig. 849.

The pulverulent mass is rather firm, and remains after the peridium breaks up. Camillea poculiformis was named Corynelia poculiformis in Weigel's old exsiccatae, about a hundred years ago. It came from South America. Years later Montagne published it as Hypoxylon poculiformis, and Léveillé as Phylacia poculiformis. I can not trace it from Fries' writings, though no doubt Fries had it and doubtless named it. The old specimens of Weigel's exsiccatae are found in most museums of Europe, and all the publishing has been done on this one collection. I have a nice collection (Fig. 848), made by T. J. Collins, in Guatemala.

SPECULATIONS.

The scanty knowledge we have of the real structure of this group of plants leaves much to speculation. They are all evidently closely related plants, and I think best classified under one general head, or genus, Camillea. They are quite different from the Hypoxylons of the temperate region, although we do not question that the tropical species are included in Saccardo mostly under Hypoxylon. When we come to compare what little we know of the species we find several differences on which "genera" could be based, and no doubt will be in time. In the original sense, Camillea might be restricted to the two cylindrical species, C. Leprieurii and C. Bacillum.

Then we have the short, cylindrical or globose forms with persistent or semi-persistent perithecia, Camillea Labellum, C. Cyclops and C. turbinata with the intermediate species C. mucronata. The above will form one, or two, genera, according to taste.

In the following plants we find no perithecia in the ripe specimens, hence of course they will in time be considered a genus. We believe there are two distinct differences between the few species we know, corresponding with the old ideas of Bovista and Lycoperdon in the puff balls. Camillea Sagraena and C. poculiformis, with two divisions of the gleba, a fertile and a sterile portion, and Camillea Bomba and C. globosa (?) with homogenous gleba. The species Camillea Sagraena differs from the other in having the fertile portion composed largely of spores (scanty in others) and in having part of the sterile portion of uncolored hyphae. Of course, it will form a "genus." Thus the genus Camillea can be easily divided into five "genera," and we make the suggestion for the benefit of those engaged in breaking up the old genera, and proposing new names to which to add their own. Who will rise to the occasion?

THE GENUS THAMNOMYCES.

This is included in Saccardo as part of Xylaria, but we feel is well entitled to generic rank. It was proposed by Ehrenberg in 1820 for a curious species collected in Brazil. The genus differs from Xylaria in having the fruiting bodies on the ends of branches, which

* So shown in one specimen on Fig. 848, but doubtful if it is a character of the plant.

in one species are dichotomous, or in the other two species sessile or subsessile and borne on a slender rhachis. There are conflicting accounts of the structure of these bodies. The original, by Ehrenberg, represents them as hollow bodies, with the perithecia imbedded in the walls. That also is as shown by Cooke and is the usual idea. Moeller, on the contrary, represents each body as a perithecium, and our examination confirms Moeller's view. If Moeller's account is true, as it seems to be, it is a strong reason why Thamnomyces should not be classed with Xylaria.

The usual Xylaria has a white, sterile, central portion known as the stroma, bearing a carbonous crust. The perithecia are generally imbedded in the outer portion of the stroma, the mouths opening through the carbonous crust. The walls of the perithecia are carbonous, and confluent with the crust. The genus Thamnomyces has a slender stem, entirely carbonous. This seems to have been the main difference between it and Xylaria in the old classification, but the character is fallacious.

There are species of Xylaria that have no white stroma. The stem is slender and carbonous and bears the carbonous fruit bodies, superficial, but sessile and globose. Fries proposed for these species, the generic name Rhizomorpha, which Saccardo united with Thamnomyces as a section of Xylaria. In my view it is an entirely different idea from Thamnomyces and should form a section in itself in the genus Xylaria. There are several species like Xylaria scopiformis that intimately connect Rhizomorpha with Xylaria.

We believe the genus Thamnomyces, in the true sense, embraces only three species as follows:

Fig. 850.

THAMNOMYCES CHAMISSONIS (Fig. 850).—Stem carbonous, black, smooth, repeatedly dichotomously branched, the ultimate branches bearing ovate, acute fruiting bodies. Structure of these bodies shown by Moeller is entirely carbonous, hollow, each forming a single, carbonous perithecium. Spores shown by different authors as of different shapes and sizes. In our specimens they are 9x20-28 mic., dark, and arctuate. They closely resemble the ordinary Xylaria spore.

This was originally named from Brazil by Ehrenberg, who gave a good illustration of it. It has therefore escaped all synonyms, excepting by Cooke, who discovered it was a new species and called it Thamnomyces dendroidea. Hennings also discovered it from Africa, first as a new variety, then as a new species, Thamnomyces camerunensis, but of course everything that came to Hennings must be "new" something. It grows on rotten, hard wood, and does not seem frequent in our American tropics. In Africa, however, I judge it is more abundant as numbers of African collections are in the museum at Berlin. We have only received it once, a nice specimen (Fig. 850) from R. H. Bunting, Gold Coast, Africa.

THAMNOMYCES CHORDALIS (Fig. 851).—Stem long, slender, several proceeding from a common base, entirely carbonous, black, smooth. Fruiting bodies (or perithecia?) sessile along the stem, ovate, with slender apices, black. Spores oblong, arctuate, dark.

This, I believe, is only known from tropical America, but is apparently not rare as it is recorded a number of times, mostly from Brazil. Fries named it from French Guiana in 1830 and gave a characteristic description of it. A co-type with the fruit mostly gone is at Kew. Later Montagne got it also from French Guiana and gave a good figure and description under the name Thamnomyces rostratus. He thought it was different from Fries' species on account of the spores not being globose, but the "globose" spores of the original description is doubtless an error. The plants are surely the same. As Montagne's figure is characteristic, the plant when subsequently found has usually been recorded under his name. We present in our figure both Montagne's and Fries' type.

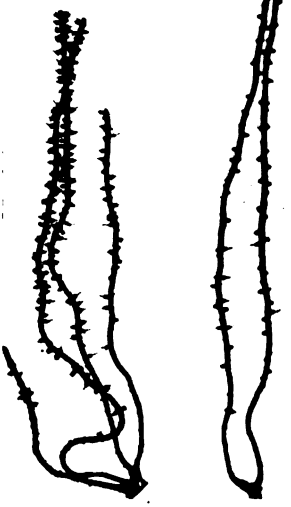

Fig. 851.

Fig. 852.

THAMNOMYCES FUCIFORMIS (Fig. 852).—In general appearance, this is the same as Thamnomyces chordalis, but a much

larger plant. The fruit bodies (perithecia?) are more slender and are short, stalked. Our figure, which is about half the spike, will show exactly the difference between the two species. The plant was named by Berkeley from specimens collected in Brazil by Spruce, and to this day is only known from this old collection. The name is from the habits, "those of a fucus rather than a fungus," a far-fetched comparison, for my impression is there are no fuci that are carbonous, or have much resemblance to this plant.

RELATED PLANTS.

The following plants are compiled in the section Thamnomyces in Saccardo. None of them are true Thamnomyces, and most of them could go into Fries' genera Rhizomorpha. I do not believe, however, it is possible to keep Rhizomorpha separate from Xylaria. The type species Xylaria setosa is quite different from the normal type of Xylarias in having entirely carbonous, filiform stems and superficial perithecia, but both of these features merge into Xylaria through so many intermediate species that there is no drawing the line of demarcation.

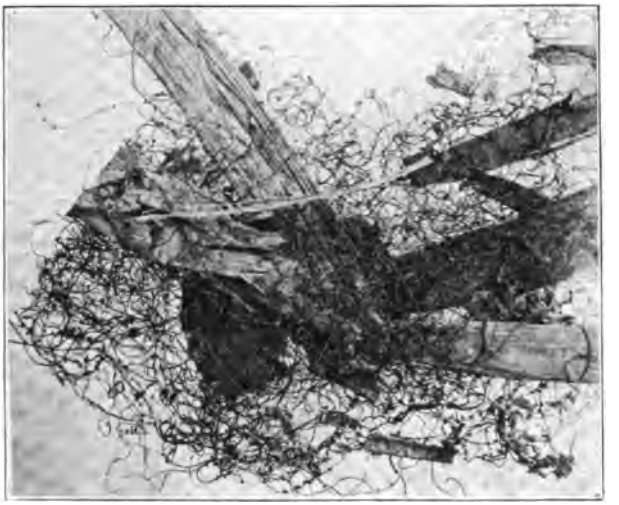

Fig. 853.

XYLARIA SETOSA (Fig. 853).—Stem densely fasciculate, filiform, black, entirely carbonous. Perithecia ovate, sparse, rarely developed. Spores (teste Fuckel), ovoid, dark, 10x16 mic.

This is a rare plant in Europe, growing on old sacks, matting, carpets, and similar refuse. It is generally found in cellars. I think it is not known on wood nor recorded in the United States. It resembles carbonized horse hair and was called "horse hair usnea" by old Dillenius. Our photograph of the specimen at Kew will give a good idea of it, although from the account it grows erect, and is not matted. Both Bulliard and Sowerby gave characteristic figures, both from plants growing in cellars, on old mats. It has had a great number

of names, and is recorded in Saccardo as Xylaria hippotrichoides, the specific name proposed by Sowerby and used by Persoon. Some very recent juggler, I have forgotten who, dug up the old name setosa, which I adopt as being less cumbersome. Occasionally these jugglers do propose some improvement in names, and I believe in encouraging them, when their wonderful date dictionary discoveries are really better names. Saccardo gives the following synonyms: Sphaeria hippotrichoides, Ceratonema hippotrichoides, Hypoxylon loculiferum, Rhizomorpha tuberculosa, Cryptothamnium usneaeforme, Rhizomorpha setiformis, Chaenocarpus setosus, Chaenocarpus Simonini. The date expert must have had quite a job.

Xylaria adnata as described by Fuckel (Rhizomorpha adnata), and unknown to me, is evidently very similar to the preceding plant, but grows closely adnate to rotten beech wood.

Xylaria fragilis (Rhizomorpha fragilis) is imperfectly known from old records in Europe. It is probably same as above.

Xylaria hispidissima (Rhizomorpha hispidissima) from East Indies is known only from old description. It is an evident Xylaria and seems to be same as recently collected, adventitious in a hot house in Hungary, and distributed as Xylaria hungarica.

Xylaria annulata, described in 1820 from West Indies as Thamnomyces annulatus and unknown otherwise, reads like Thamnomyces chardalis, but the branches of the latter are not known to be "annulated under a lens."

XYLARIA ANNULIPES, described and figured by Montagne as Thamnomyces annulipes from Brazil, is same as since named Xylaria marasmoides (Fig. 854) by Berkeley. Berkeley does not mention the rings on the stem as shown so plainly in Montagne's enlarged figure, nor can I note them with a lens on my photograph of Berkeley's or Montagne's types. Spegazzini refers marasmoides as a synonym for annulipes, no doubt correctly. Theissen refers it as a synonym for Xylaria aristata, an evident error. Xylaria vermiculus, recently published from Brazil by Sydow, as "Saccardo n. sp. in litt.," is, both from description and photograph, evidently the same as Xylaria annulipes.

Fig. 854.

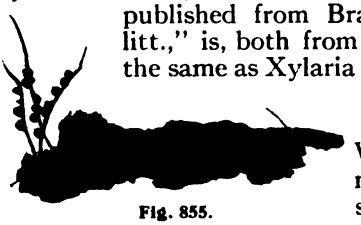

Fig. 855.

XYLARIA MELANURA (Fig. 855), West Indies, described as Chaenocarpus melanurus and compiled in Saccardo in section Thamnomyces, is evidently same as Xylaria gracillima in sense of Berkeley and Montagne, but not I believe as to Fries. We present a photograph made from Léveillé's cotype.

Xylaria axillaris was not compiled in Thamnomyces in Saccardo, but is evidently a very similar if not the same plant as Xylaria setosa, and is only known from Currey's original account from Africa. It is about a half inch high, with filiform stem, and few, superficial perithecia. Spores are given as 25 to 32 mic., which are much larger than those of setosa.

Xylaria patagonica as named by Crombie as Thamnomyces and compiled in Saccardo, Vol. 9, was based on Dillenius' old (1741) figure t. 13, f. 11, from Patagonia, which, as far as the figure goes, could be Xylaria setosa. Of course, nothing is known about it.

Xylaria Schwackei, named by Hennings from Brazil, seems from description to be Xylaria melanura.

Xylaria Warburgii, named by Hennings from New Guinea, seems from the crude figure to be Xylaria carpophila.

Xylaria luzonensis, named from Philippines by Hennings, seems from crude figure to be Xylaria multiplex in original sense of Fries (not Thiessen).

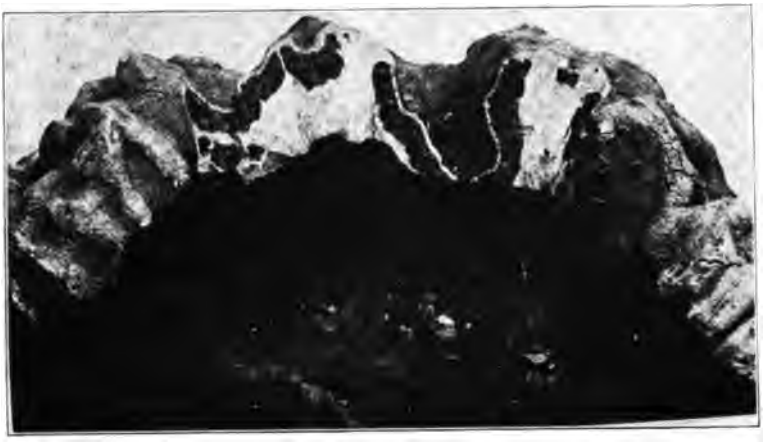

Fig. 856.
Engleromyces Gœtzei.

THE GENUS ENGLEROMYCES.

Plants large, subglobose, with alveolate, sinuate carbonous exterior. Stroma white, fleshy, 1½-2 cm. thick. Perithecia carbonous, forming several stratose layers, imbedded in the stroma in the depressions. Spores 12-15x18-24, dark, smooth, curved, agreeing with Xylaria spores.

ENGLEROMYCES GŒTZEI (Figs. 856 and 857).—This is the largest Pyrenomycete, and as far as known only occurs in Eastern, tropical Africa. In 1900 Hennings described and named it, and there are several specimens on exhibition in the museum at Berlin. Some years later (1906) a specimen reached Paris from the same region. It was sent to the anthropological museum at Paris, the collector taking it for a fossilized skull. The reference to a skull is not inappropriate as will be noted from our photograph (Fig. 857) from the specimen at Paris. Patouillard, not knowing of course what Hennings had done at Berlin, renamed it Colletomanginia paradoxa. Our figure 856 shows a section, and the arrangement of the perithecia. Practically nothing is known as to its habits. Patouillard states it occurs on the trunk of Abies, Hennings on Bamboo. We feel that on publication of our photograph there will be no occasion for further names for it.

Fig. 857.
Engleromyces Gœtzei.

THE LARGE PYRENOMYCETES

SECOND PAPER

BY C. G. LLOYD

CINCINNATI, O. JULY, 1919

THE LARGE PYRENOMYCETES

The Pyrenomycetes are a very large order of fungi, but mostly consist of minute species. The little ones are a world in themselves and a man could spend his life working on them and then would not know much about them. The large ones, for the most part in temperate regions, are for the greater part Xylarias or Hypoxylons. The old distinction of Fries that Xylarias are erect, stalked, club-shaped, simple or branched, and Hypoxylons are sessile, globose, convex and immarginate, answered well for the species with which he was acquainted. In the tropics it is difficult to always apply this distinction, for Xylarias take globose forms and merge into Hypoxylons according to the old definition. There is a very important distinction between Xylarias and Hypoxylons in our temperate region species and for the most part in the tropics—the nature of the stroma. Prominence has not been given to this feature to the degree it merits in classification. In Xylarias there is usually a white, tough, fleshy stroma, surrounded by a carbonous black, dissimilar crust. In Hypoxylon, at least in all the species I have noted, the stroma is dark and carbonous.

All of the large Sphaeriaceae have black, carbonous perithecia. In fact if the perithecia are not carbonous the plant is of the Hypocreaceae, and none of the Hypocreaceae have carbonous stroma or crust. If the fleshy or carbonous nature of the perithecia is so important that the families are based on it, it seems to me that in the large Sphaeriaceae the nature of the stroma should be considered in defining the genera, particularly as it is the most obvious and prominent character of these plants. Like all rules it has exceptions: Rhizomorpha, considered by Saccardo and perhaps best considered as a section of Xylaria, was defined by Fries as all carbonous, although all the species that Fries included are not all carbonous; Camillea, mostly consisting of all carbonous species, has one, Camillea Saegraena, with a little white tissue in the stroma.

The principal genera arranged on this plan, on the nature of the stroma are as follows:

Stroma all fleshy with the carbonous perithecia imbedded
- Club shaped, with a stipe ..... Carnostroma
- Discoid, with a disc ..... Poronia

Stroma fleshy with a carbonous crust
- Club shaped, subglobose or filiform with a stipe or sterile base ..... Xylaria
- Large, subglobose, with sinuate exterior, hollow ..... Engleromyces
- Globose, or subglobose with a distinct stipe, with thick often bright colored cuticular covering over the carbonous crust.
  - Stroma solid, fleshy, white ..... Sarcoxylon
  - Stroma gelatinous, at length hollow ..... Glaziella
  - Stroma spongy, soft, subcarbonous ..... Penzigia

Stroma all carbonous (rarely partly fleshy).
- Cylindrical or pulvinate. Perithecia cylindrical, contiguous, persistent, or disappearing early leaving a powdery mass ..... Camillea
- Slender, filiform or dichotomously branched, the ovate perithecia arranged laterally or on the ends of the dichotomous branches ..... Thamnomyces
- Mostly globose. Stroma soft of alternate concentric zones of carbonous and fleshy layers .. Daldinia
- Heads densely caespitose, the stems mostly confluent and forming a crust like layer ..... Kretzschmaria
- Globose, pulvinate, or effused. Stroma hard, carbonous ..... Hypoxylon
- Discoid or effused. Stroma hard, carbonous ..... Nummularia
- Effused, the stroma fragile and crust like .... Ustulina
- Effused, pulvinate, the stroma soft, fibrillose, carbonous ..... Phaeostroma
- Stroma poroid, with pores ..... Porodiscus
- Stroma dimidiate, the perithecia forming a continuous layer on the lower surface ..... Pyrenopolyporus

Several of these usually run together, as Xylaria and Sarcoxylon, Xylaria and Hypoxylon, and we really can not tell what the difference is between effused Hypoxylon and Nummularia, nor any real difference between Nummularia and Ustulina. We have never worked over the foreign Hypoxylons and Nummularias, and perhaps when we do we may be able to decide on some definite line of demarcation. The old distinction found in our text books of differences based on the nature of the conidial stages is not very practical for the conidial stages are not known excepting as to a relative few, and as to these there is not much difference.

THE GENUS KRETZSCHMARIA

The receipt from Mr. Gossweiler from Africa of what is without doubt Kretzschmaria cetrarioides, as named and well illustrated by Currey from Africa, has led us to go over the specimens, photographs and records of this genus. Thirty seven so called species have been proposed, and we have photographed those we saw in the museums of Europe. Very little difference is shown in our photographs, and

the study of the "descriptions" shows very few essential differences. We believe the number of species could be very much reduced, and we have referred them tentatively to seven, and that is more than we think are really distinct, for Kretzschmaria clavus is probably the same as Kretzschmaria caenopus and Kretzschmaria lichenoides the same as Kretzschmaria cetrarioides. If one will compare the seven figures which represent the extreme forms on which about forty so called species have been based, he will appreciate the trouble in recognizing these species. As a matter of fact almost every collection that has drifted into Europe in the past has been called a "New Species".

In the early history Kretzschmarias were named as Sphaeria, then as Hypoxylon, and a few compiled in Saccardo as a section (Caenopus) of Hypoxylon. A few of them were named by Spegazzini and Currey as Xylarias (sic). Cooke first collated the species as a genus, which he called Rhopalopsis and the name should have been retained. Cooke defined the genus as "densely caespitose, head short, either simply or shortly stipitate or seated on short branches of an intricate stroma." These are the characters that the plants possess that are now referred to this genus Kretzschmaria. Saccardo subsequently used Cooke's collation but changed the name to Kretzschmaria which was simply a date dictionary juggle. Fries had proposed this name for one species (Clavus) which he defined (in error) as having "spores affixed to threads". This is the height of the name juggler's art, to appropriate a generic idea from one man and then juggle it to the generic name of another man who had an entirely different view (and in this case an erroneous view) of the name.

In addition, "Ed. Kretzschmar, traveler and botanist" never wrote a line on mycology in his life, nor collected a fungus as far as I ever noted, and has no more claim to be "honored" in connection with mycology than he has in aviation.

The main characters in which the species of Kretzschmaria differ are not usually noted in the descriptions. Some species have relatively large heads (5-6 mm.) others small (3-4 mm.). Most are carbonous within, a few have white stroma. Most have few perithecia (4-6) in a head, a few have more numerous (15-20). Some have indistinct ostioles, others have prominent ostioles. Some have large spores, 30-40 mic. long; others have small spores, 12-15 mic. long, but the exact spore size is not material. Some have distinct branched stipes, others simple stipes, and others again have the stipes confluent into a stromoid mass. If the above essentials were recorded in descriptions of "new species", and the most of the verbosity referring to features common to them all were omitted, there would not be much trouble in properly referring them. In the following arrangement we are simply guessing as to the synonymy of many of them from the "descriptions." No doubt in some cases we are wrong, but we do not believe we are as often wrong as those who find a "new species" every time they get a collection. The "new species" we have seen appear to us to be mostly about the same things.

Fries originally proposed three species from the American tropics. Thirty-four have been proposed since, but the greater part of them I am convinced would be better referred to the original Friesian species.

KRETZSCHMARIA CLAVUS (Fig. 1444). Heads medium all carbonous, flattened, even, perithecia few. Ostioles indistinct. Stipes distinct, branched. Spores 25-35 mic. long. This seems to be the common species in the American tropics. It was labeled Sphaeria pilulifera by Link, and his specimen is preserved at Kew. Fries changed the name in publishing it.

Fig. 1444.

I judge the following are all the same: From American tropics, Puiggarii Speg., rugosa Earle, divergens Starb., bulgarioides Rehm, confusa and Berkleyana, Cooke. From Australasia, Australiensis and novo-guineensis, Henn.

KRETZSCHMARIA CAENOPUS (Fig. 1445). Heads medium all carbonous, flattened, contiguous and somewhat confluent "forming an undulate crust". Surface even. Ostioles not prominent. Stipes indistinct, confluent into a stromoid mass. Spores 8 x 28. We form our idea of this species from a specimen received from John A. Stevenson, Porto Rico, which surely agrees with the early description by Fries from Cuba. We think most specimens we saw so labeled in Europe were wrong, excepting one in Montagne's herbarium. We believe also, from our photograph of the type, that Kretzmaria mauritanica from Mauritius is the same. The spore measurement is given as 5-6 x 18-20.

Fig. 1445.

KRETZSCHMARIA CETRARIOIDES (Fig. 1446). Heads all carbonous, small, round, closely packed, but distinct. Perithecia few with very prominent protruding ostioles. Stipes distinct, branched. Spores 8 x 24.

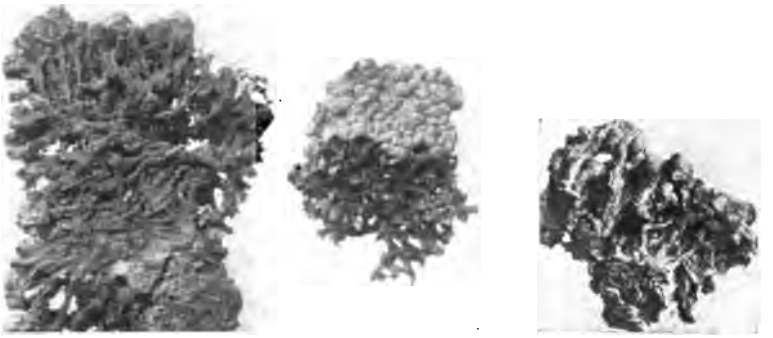

Fig. 1446

Currey named this from Africa and gave a good figure. There is no question but specimens we received from Mr. Gossweiler are the same. We present photographs of the upper and under sides. The species differs from most in its distinct branched stems. Kurziana India, and proxima, China, appear same to me, although the spore record of former (15-18) is smaller.

KRETZSCHMARIA LICHENOIDES (Fig. 1447). This agrees with the African Kretzschmaria cetrarioides in every character excepting the stems are shorter, indistinct and confluent. The heads, spores

Fig. 1447.

Fig. 1448.

and few perithecia with prominent ostioles are all the same. We measure the spores 8 x 28. We have another collection with spores 40 mic. long.

We take Father Rick's name, for we are sure of it. We believe it is the plant usually determined as Kretzschmaria caenopus in the museums. We have a nice collection made by T. J. Collins, Guatemala. Our photograph is from a cotype.

KRETZSCHMARIA PARADOXA (Fig. 1448). Named from immature specimens from China (no spores) grows in the same manner as Kretzschmaria lichenoides, same size, and prominent ostioles, but the stroma is not carbonous but white within.

KRETZSCHMARIA HELISCUS (Fig. 1449). Heads small, 2-3 mm. with white stroma. Perithecia numerous (18-20) with prominent ostioles. Stems simple distinct or rarely confluent. Spores 5 x 15 (?).

Fig. 1449.

This was named by Montagne from South America. He gives no spore measurements and records the perithecia as "few" but they are numerous compared to other species. His figure shows seventeen. We take the spore measurement from Kretzschmaria truncata, which appears to us to be the same. Kretzschmaria scruposa from New Caledonia, Kretzschmaria gomphoidea from Java, Kretzschmaria xylarioides from Argentine and Kretzschmaria pusilla from Central America, we judge from our photographs and descriptions are the same. The latter, however, has spores recorded as 6 x 20-22.

KRETZSCHMARIA SESSILIS. This seems to be a species of which we have seen no specimens, characterized by subsessile heads, and small spores 5-6 x 11-13. It was described from South America and was named, I think also, stilbophora and microspora from Brazil and glebulosa from Ceylon. The latter also was named as a variety (apoda) of caenopus by Berkeley. Cesati gives the spores as 5-6 x 12 and calls attention to Cooke's record "7½ x 30-32".

KRETZSCHMARIA MICROCEPHALA. Known to me only from Montagne's figure from Chile, named as Xylaria, but appears to be a Kretzschmaria. It has very small heads not much larger than pin heads, and is shown (enlarged) with a pubescent stem which branches and bears these heads.

RELATED PLANTS

Hypoxylon micropus in the sense of Berkeley, as figured by Cesati (but probably not Fries), has the heads borne in a different manner from any Kretzschmaria, but

probably the figure is inaccurate. He shows the spores as septate and each perithecia appears to be separate.

Xylobotryum andinum from South America, as figured, has same separate perithecia and septate spores. The general appearance of these two plants is somewhat different but they are suspiciously close.

SPECIES EXCLUDED OR "DESCRIBED" SO NO ONE CAN TELL MUCH ABOUT THEM.

Aggregata, Africa, Currey, certainly from figure is not a Kretzschmaria.

Angolensis, Africa, Currey is a Daldinea, Cfr. Myc. Notes, Page 688. Cooke's figure of it from Australia (Handbook Fig. 199), has no resemblance to it whatever.

Colensoi, New Zealand, Berkeley described as Hypoxylon, but seems to be a Kretzschmaria, but description covers no essential feature to refer it to any species.

Congestum, Ceylon, Berkeley. Probably not a Kretzschmaria; but if so differs from all other species in having globose spores.

Contracta, South America, Spegazzini, cited by Cooke, but never published as far as I have found.

Guaranitica, South America, Spegazzini. Not a Kretzschmaria from description. "Solitary".

Lichenoides, Berkeley. Cited by Cooke, but seems to be a mss. name only.

Micropus, Brazil, Fries. This was the first species described, but has not been recorded nor recognized since. We judge from original description it is same as lichenoides of Rick. In sense of Cesati's figure (determined by Berkeley) it can hardly be Fries' species. Cooke gives the spores 9-12 x 30-38, but that does not imply that he saw a specimen.

THE GENUS DALDINIA

The distinctive character of Daldinia, is a zonate arrangement of the stroma, alternate white or pale pithy layers, alternating with narrow black carbonous layers. These zones are of different texture and color. There are species of Hypoxylon that have carbonous stroma with faint darker zones but of same texture. These are not Daldinia for me. The spores of Daldinia are dark, smooth, and same type as Hypoxylon and Xylaria spores. They are about same size, 4-5 x 8-12, in most of the species and do not afford specific characters. One species (from Java?) is recorded as having large spores but it is only known from an old record that is liable to be a mistake. There is but one common species, Daldinia concentrica, which occurs in abundance in apparently every country of both tropical and temperate regions. We have in the United States another species, Daldinia vernicosa, but more rare and not strongly distinct from the common species.

When young and growing Daldinias are covered with a ferruginous conidial layer, the usual condition during summer and the early fall months. In maturing this layer disappears and the surface becomes black, smooth and shiny.

We have in our museum about 130 collections of Daldinia which are for the most part referable to Daldinia concentrica. We have gone over our specimens, records and photographs, and would arrange the species as follows:

DALDINIA CONCENTRICA (Fig. 1450). Usually globose, sessile, varying from a cm. to three or four inches. Usually about an inch in diameter. Large forms are common in New Zealand and specimens over three inches in diameter reach me from this country. We have one collection from England 2½ inches in diameter. Rarely reduced to a short stipe like base, when it merges into the next species, but in the usual collections the species are well distinct in their shape. The pale layers of the context are never white in this species as far as I note but pale colored. The surface of the plant is usually even

as shown figure 1451 (enlarged), but a form we get from our Western States the surface is minutely rough with the slightly protruding perithecia as shown figure 1453 (enlarged). We call the latter Daldinia Californica. We do not note similar surface on specimens from any foreign country but we hardly think this character of specific value.

SYNONYMS. Daldinia Asphaltum Brazil, from description: loculata, United States, Léveillé's vaporings: durissima, Europe, cotype at Kew: Eschscholtzia Philippines, one of the first foreign fungi named, but surely from figure and description based on condial D. concentrica. There is no basis for considering it distinct even as a variety as held by Rehm and others. Gollani, India, only small specimens: platensis, South America, from description: stratosa, Australia based on the large form common in Australasia; caldarium, exotic (Berlin) depauperate specimens in the hot house.

Fig. 1450.

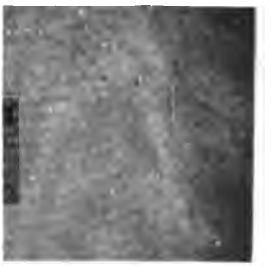

Fig. 1451

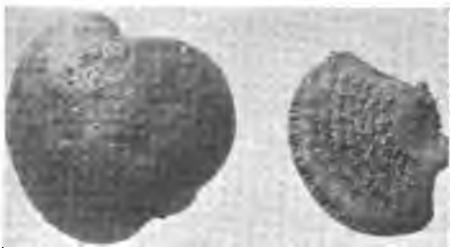

Fig. 1452.

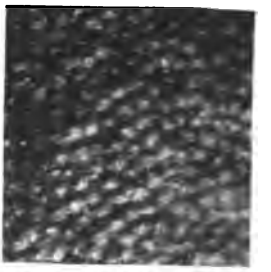

Fig. 1453.

SPECIMENS. **United States and Canada,**54 collections; **Europe,** 10; **Japan,** J. Umemura, A. Yasuda, both small; **Australia,** J. T. Paul (3), W. W. Froggatt, Rev. James Wilson, Dr. J. B. Cleland; **New Zealand,** R. W. Robinson, Jessie Dunn, S. Duncan, W. A. Scarfe, W. E. Barker (3) some over three inches in diameter; **Tasmania,** L. Rodway; **Tropical Africa,** R. H. Bunting, A. Karasek, T. Hunter, (2), P. Hyac. Vanderyst, Dr. Zenker, (2); **South Africa,** A. J. T. Janse, (2), Miss A. V. Duthie (2); **Madagascar,** P. de la Bathie; **Reunion,** E. Dupont; **Mauritius,** C. A. O'Connor; **India,** Wm. Golden, S. Hutchings, H. Val. Ryan, Joges Ray, J. Hornell, G. H. Cave; **Cuba,** C. G. L. (5); **Jamaica,** Wm. Cradwick; **Philippines,** E. D. Merrill (2); **Syria,** Rev. A. Boulomoy; **Chili,** M. F. Espinosa, Total 106.

FORMS–DALDINIA CALIFORNICA (Fig. 1452). We would so designate the form of Daldinia concentrica with the slightly protruding perithecia, as shown in figure 1453 (enlarged). We have several collections from California.

DALDINIA CONFLUENS. Usually Daldinia concentrica grows separate and distinct, rarely contiguous, but we have one collection from James R. Weir. (which we have labeled Daldinia confluens) where the plants are conglomerate and merge into each other.

DALDINIA INTERMEDIA. All previous specimens are globose or subglobose and have cinereous pale context zones. We have two collections (G. D. Smith, Ohio and Chas. Golosel Wisconsin) with context of Daldinia concentrica and shape of Daldinia vernicosa which we have labeled as above.

DALDINIA CORRUGATA (Fig. 1454). This from Africa is quite close to Daldinia concentrica. The shape is somwehat turbinate and the surface uneven, corrugated. We have specimens from A. D. Machardo, Perak, L. J. K. Brace, Bahamas, and C. G. L. Samoa. D. cognata from New Caledonia appears to me the same and both are too close to the common Daldinia concentrica.

Fig. 1454.

DALDINIA VERNICOSA (Fig. 1455). Turbinate, with a short stipe. Strongly laccate, shiny, usually. Stroma of alternating zones, of soft, pithy, white context, and narrow black carbonous zones. Spores 8 x 14 (the record in Saccardo 20 mic. is too large).

It is a rather rare species in the United States distinguished from our common species by its shape (usually) and by the soft, white context zones. It is more fragile and often becomes hollow when old.

Fig. 1455.

SYNONYMS. Daldinia cingulata, United States, Léveillé's vaporings; Daldinia vernicosa var. microspora, Brazil, no doubt based on the large spore record in Saccardo.

SPECIMENS. South Carolina, Berry Benson; Iowa, O. M. Oleson; Minnesota. Dr. Mary Whetstone, Dr. J. E. Crewe; Vermont. C. G. L.; Ohio, Burtt Leeper; West Virginia, Rev. Boutlou; Connecticut, Miss Ruth Wilber; Florida, G. C. Fisher.

DALDINIA ALBOZONATA (Fig. 1456). Turbinate, with a short stipe. Surface dull not laccate. Stroma of firm, white context and narrow black carbonous zones. Spores, 4 x 8.

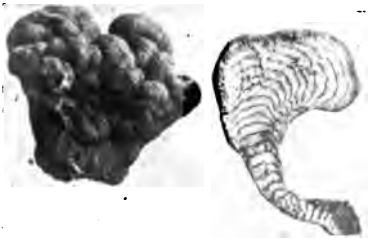

Fig. 1456

This is close to the preceding species but hardly suggests it until it is cut open. The caespitose habits, dull surface, firm white context, zones and small spores distinguish it. We have a fine collection from G. Zenker, Cameroon, Africa.

DALDINIA BAKERII. We have one collection from R. T.

Baker, Sydney, Australia, which is sessile, globose, 1½ inches in diameter, and strongly laccate. As to context zones it agrees with albozonata and spores are 7 x 14. We have labeled it as above, as on the characters it presents it can hardly be referred to any named species.

DALDINIA CLAVATA. Excepting shape this seems same as Daldinia vernicosa. The same shiny surface, same white context zones, same spores. But this is cylindrical, and seems to be well characterized by shape. It is apparently frequent in the American tropics. It was named from Brazil by Hennings, and since named D. argentinensis by Spegazzini (and var. sessilis) and D. cuprea by Starbäck. D. barbata, named by Rick from Brazil on account of spores when excluded being united as threads, is said by Theiszen to be this species but I have seen no evidence of such spores on any specimen I have. Petch records that the spores of Xylaria nigripes are thrown out in the asci, which deliquesce, leaving the spores united in threads. While I have five collections all are broken, and none would make a good illustration.

SPECIMENS. Rev. J. Rick, Brazil; T. S. Brandegee and Dr. S. J. Bonansea, Mexico; T. J. Collins, Guatemala (2).

DALDINIA GRANULOSA seems from description to be stipitate Daldinia clavata. It is unknown to me.

DALDINIA ANGOLENSIS (Fig. 1457). Capitate or turbinate, small, about a cm. high. Surface strongly laccate. Context soft, pithy, white. The only carbonous zone is the outer perithecial zone. Spores 6-7 x 12-14, obtuse, dark. We have a fine collection of this from T. Hunter, tropical Africa. It is only known from Africa and was named Hypoxylon angolense by Currey and well figured. Compiled in Saccardo (on a guess) as Daldinia angolensis. Put by Cooke in Rhopalopsis, then changed in Saccardo to Kretzschmaria angolensis and recently it has been called Camillea africana.

Fig. 1457

DOUBTFUL AND EXCLUDED SPECIES.

Daldinia aspera, West Indies, Massee, Hypoxylon cerebrinum (cfr. Myc. Notes p. 599).
Daldinia vernicosa, West Indies, Fee changed to Daldinia Feei in Saccardo. Unknown, no specimen found by me, but no Daldinia known to me has "apex subacute".
Daldinia Feei, West Indies, Saccardo. (See above).
Daldinia Thouarsiana, Pacific Island, Léveillé is a Hypoxylon and now generally known as Hypoxylon malleolus. It becomes for the Kuntzeites, Hypoxylon Thouarsiana (Lev.) McGinty.

THE GENUS PENZIGIA

We have not seen the specimen on which this was based, but it appears to be well illustrated. In this sense it differs from Sarcoxylon and Glaziella in having subcarbonous stroma. It is quite close to Daldinia, but does not have alternate layers of carbonous and fleshy tissue. Xylaria Ridleyi (Xylaria Notes, page 12) probably is a better Penzigia than Xylaria, and Penzigia obovata in the sense of Spegazzini (of Berkeley?) is surely based on the same plant.

THE GENUS CARNOSTROMA

We base this genus on an old and well known species of the East which has always been classed as Xylaria, but which in our view differs essentially from all Xylarias in not having a carbonous crust. The carbonous perithecia are imbedded in the white, fleshy stroma. It is the same idea as Poronia, excepting that the latter is an entirely different form.

Fig. 1462.

CARNOSTROMA THYRSUS FROM DR. CH. BERNARD, JAVA (Fig. 1461).—Growing from the ground with a rooting base. Stem six to eight inches long, with a white center and carbonous crust. The stem bears a white, conical fleshy stroma, one to two cm. long, one-half to one cm. thick. The perithecia are imbedded in white stroma, only the black mouths of the ostioles showing on the surface. The spores are large, 12 x 36-40 mic., elliptical, slightly curved, obtuse at both ends and surrounded with a thin, hyaline, gelatinous coating. Carnostroma thyrsus appears to be a rare species. Only two collections from India and this one from Java are known to me.

Fig. 1461.

This plant was well figured by Berkeley (Ann. & Mag. 1842, pl. 12) from a specimen he found in the British Museum from Calcutta. It is not at Kew, at least I have no note of seeing it there. Berkeley described it as Sphaeria and the club as "pale," but did not comment on the absence of a carbonous crust, a feature in which it differs from all Xylarias. Cooke, who simply copied Berkeley's figure, undoubtedly without the trouble of looking up the specimen, put it in Xylaria. Theiszen here refers a true Xylaria (X. lancea) from Brazil which has only a resemblance to it in form, not otherwise, but Theiszen drew his conclusions from Cooke's work. Sydow records from British India a specimen which he figured and named Xylaria excelsa, in 1914. He should have known better, for Berkeley gave an excellent figure of the plant and there is no excuse for anyone renaming it as a "new" species.

THE GENERA SARCOXYLON, PENZIGIA AND GLAZIELLA

These three genera are very close and compiled under Penzigia in Saccardo. By the old writers they were included in Xylaria and Hypoxylon, and they have the perithecia and spores of Xylaria. Their form is always subglobose and they have a thick, often bright-colored, cuticular covering over the carbonous crust. We would characterize them as follows by the nature of the stroma:

Stroma solid, fleshy, white.....Sarcoxylon
Stroma spongy, soft, subcarbonous.....Penzigia
Stroma gelatinous at length hollow.....Glaziella

We are not acquainted with all the species that have been proposed and can only consider those we have seen. It is evident there are no sharp lines between these genera nor between these and Xylaria and Hypoxylon.

THE GENUS SARCOXYLON

This genus is simply a thick or subglobose Xylaria with solid white stroma and having a yellow, thick cuticular layer over a thin, carbonous layer. In the only species well known to me it further differs from Xylaria in having the perithecia contiguous, forming a palisade layer, and extending only over the disc or upper half of the sporophore.

SARCOXYLON COMPUNCTUM, FROM A. D. MACHARDO, PERAK (Fig. 1458).—Sporophore globose or obovate, 1-3 inches in diameter, covered with a thick yellow cuticle over a thin, carbonous

Fig. 1458.

crust. Flattened or convex at the disk, the contiguous perithecia only extending over this portion. Perithecia carbonous, contiguous, forming a layer about 2 mm. thick. Spores elliptical, colored, about 7 x 12 mic. Stroma solid, fleshy, white.

A frequent plant, particularly in the East. I found it in quantities in Samoa, and it generally grew hanging from the underside of fallen trees that had lodged before reaching the ground. It seemed very curious to me, for it was so totally unlike any genus I knew in the States. Junghuhn described and figured it from Java as Sphaeria compuncta about eighty years ago. Its classification has been a source of dissension among mycologists ever since. Fries and Montagne called it Hypoxylon. Berkeley called it Xylaria. Saccardo puts it in Penzigia and Cooke proposed for it the genus Sarcoxylon. Cooke, however, described its perithecia as membranaceous and placed it in Melogrammaceae, but Cooke very rarely got anything entirely right. I have a few specimens from Rev. Rick, Brazil, and it is apparent that Xylocrea piriformis "new sp. et gen." named by Moeller from Brazil is the same thing.

SARCOXYLON LE RATI.—We gave in Mycological Notes, page 668, all we know as to this imperfectly known species. It is rare and only reported from Australia and New Caledonia. Dr. Cleland has not yet sent us ripe specimens nor the tuber from which it is developed, as we hope he may do sometime when he finds it again.

THE GENUS GLAZIELLA

As to general shape, bright cuticle, perithecia and spores this is the same as Sarcoxylon, but it differs in the stroma, being gelatinous when fresh and drying hard, horny and usually hollow.

GLAZIELLA SPLENDENS, FROM JOHN GOSSWEILER, WEST AFRICA (Fig. 1459).—This is a plant with a very confused history. Berkeley named it from Cuba as Xylaria splendens, and afterwards probably the same (although as to this I am not sure, as I found no specimen, and he gave no description) as Glaziella vesiculosa from Brazil. He described Glaziella very briefly, "subglobose, bright color. Perithecia pale, filled with hyaline gelatine." It is apparent to me that he did not intend to say "perithecia," but sporophore, which is quite a different idea. With this correction the genus Glaziella has some logical meaning, and is the same as since called Entonaema by Moeller and Sarcoxylon in part by Patouillard. As to spores and perithecia it corresponds to Xylaria, but it is not club shaped, but subglobose, and has a bright, thick cuticle and the interior is gelatinous, becoming hollow.

Fig. 1459.

Glaziella splendens appears to be widespread. Originally from Cuba, it has been collected in Alabama by Dr. Burke and is no doubt distributed through the American tropics. Patouillard records it in New Caledonia under the name Sarcoxylon aurantiacum and Miss Wakefield has previously noted it from Africa. Our figure is a photograph of the type at Kew.

"GLAZIELLA" AURANTIACA, FROM A. H. RITCHIE, JAMAICA (Fig. 1460).—We are satisfied this is not a Glaziella, but we do not know what genus it is. We are quite sure, however, of its history, for we have recently seen the specimens of Wright's collection from Cuba, where it was named. Berkeley called it Xylaria aurantiaca and Cooke, Glaziella aurantiaca. It is quite evident it does not belong to either Xylaria or Glaziella, and in my opinion not to the same family of plants. Berkeley defines it as having "ostioles depressed" and Cooke, as to Glaziella, quotes Berkeley's definition "perithecia filled with gelatine." The plant has neither ostioles nor perithecia. It must not be confused, as I did one time in naming a collection from Dr. Burke, with Glaziella splendens. Nor is it, I think, Glaziella vesiculosa, as published by Ellis from Central America, which is also no doubt Glaziella splendens. When I received the plant I did not know it, and sent it to Dr. Seaver, thinking it was an undeveloped Discomycete. He advised me that it corresponded to a specimen of Glaziella aurantiaca, named by Massee in Ellis' herbarium. I thought there was a mistake somewhere, for I have not much faith in Massee and I could not conceive that Berkeley had ever referred it to "Xylaria," to which it has no possible suggestion even, and Berkeley did not make many such bulls. But it is straight, as I have since learned from Wright's cotype. There is something very mysterious about this plant. It is hollow and light weight, with brittle flesh, and was apparently orange when fresh. Berkeley says it has no attachment, and Seaver questions its being a fungus. I think the specimens all show where they have broken away from the attachment, and as to its being a fungus I have no doubt. But how to class it I do not know, for no one has found any spores or fruit or clue to its classification. There is, lining the interior surface, a layer of large, hyaline vesicles, 16-20 mic. in diameter, which may be the cells of what may develop a hymenium. We hope Mr. Ritchie will continue to collect the plant, some very young and some very old specimens, and note in what way the plant grows and how it is attached. This is one of the problems of mycology that should be cleared up.

Fig. 1460.

LIST OF PHILIPPINE XYLARIAS

Since this pamphlet has been in type we have been favored by E. D. Merrill with the herbarium sheets of Daldinia, Kretzschmaria and Xylaria, embracing most of the historical material named from the Philippines.

The Philippine Xylarias had been determined by Hennings, Rehm and Sydow, and it is quite patent that their "determinations"

were in the main guesses and bad guesses at that. Very few of them were correct and many of them have not the most remote suggestion of being right.

The following are the species of Xylaria of which I have seen specimens from the Philippines:

allantoidea. This is rather frequent and was correctly determined.

anisopleura. This species occurs in the Philippines, but the record was a misdetermination for scruposa.

apiculata. Recorded as a new species, bataanensis, by Hennings.

aristata. Recorded as a new species, setocephala, by Yates.

biceps. Recorded as tuberosa.

biformis. Will be published in Mycological Notes.

bipindensis. It is not certain that the Philippine specimen is the same as the African.

botuliformis. Named from the Philippines by Rehm, and appears good to me, but co-type is very scanty.

castorea. This is close to Schweinitzii, but has small spores.

cordovensis. Determination based on Cooke's figure and description only, hence doubtful.

dealbata. Very doubtful.

fibula. This is probably the species recorded as tuberiformis.

fulvo-lanata. Only known from the old types at Kew, named from the Philippines in 1844. It is something peculiar, but sterile and doubtful.

gracillima. Recorded as a new species, gracilenta, by Sydow.

grammica. Surely the same as the Brazilian species, but not so strongly "lined."

herculea. There is a ripe specimen on the Philippine sheets. I have several young specimens from Mr. Reinking, doubtfully referred here.

Hypoxylon. Tropical form only, and not the same as the European plant.

lignosa. Determination doubtful. Recorded as euglossa, which no one knows, but description does not fit this.

laevis. Received from Mr. Reinking.

luteo stroma. Same as castorea excepting it has a yellow stroma.

multiplex. A characteristic species of tropical countries, growing usually on the large pods of the Leguminosae. It is the basis of the erroneous Philippine records under the names, juruensis, ianthinovelutina and luzonensis.

nigripes. Grows on the ant hills.

reniformis. I am not sure this differs from fibula, though the surface appears different.

Ridleyi. Seven collections seen by me from the Philippines.

rhophaloides. Usually determined as corniformis of which it is the tropical form.

Schweinitzii. A tropical form species of polymorpha. Recorded in error as obovata from the Philippines.

scruposa. Recorded as anisopleura in error.

UNKNOWN TO ME.—I have not seen specimens on which determinations of the following were made:

bacilliaris. Named by Rehm.

gigantea and tabacina, both probably based on allantoidea.

myosurus. Types from South America are immature, but nothing like it has been seen by me from the Philippines.

pallida. Only known from the types at Kew.

plebeja. Recorded by Bresadola.

tuberiformis. Not seen by me from the Philippines, but close to anisopleura.

vinoso-fusca. Named from the Philippines by Bresadola.

MISTAKES AND SYNONYMS.—The following are errors as to the Philippine records, being misdeterminations or synonyms.

clavata. (Juggle only.) For polymorpha, but the European form does not seem to occur in the Philippines.

corniformis. Not the type form, but rhophaloides (common).

euglossa. The determination is lignosa of above list, but that is not sure.

exalbata. Determination based on grammica.

ianthino-velutina, juruensis and luzonensis are all multiplex.

obovata. As to Sydow's determination is Schweinitzii. The true obovata may be Ridleyi.

obtusissima. Philippine record was based on castorea.

polymorpha. European plant does not appear to occur in the Philippines.

tuberosa. Based on biceps.

ADDITION NOTES.—We can only consider here a few of the prominent species.

Xylaria grammica occurs in the Philippines the same as in the American tropics. But there occurs also a form that is much less strongly "lined" than our plant.

Xylaria Ridleyi, which we supposed was a very rare species, is common in the Philippines. It had been determined mostly as Xylaria grammica (sic), to which it has not the slightest resemblance or suggestion. Since we published it, the question has arisen if it is not Xylaria obovata, but we will consider that in detail elsewhere.

Xylaria luzonensis, as named by Hennings, is the same as Xylaria multiplex. (Cfr. Xyl. Notes, page 25.)

Xylaria setocephala, as named by Yates, is the same as Xylaria aristata. (Cfr. Myc. Notes, page 534.)

Xylaria bataanensis, as named by Hennings, is the common Xylaria apiculata.

Xylaria Copelandii, as named by Hennings, at least the co-type, is one of the worst bulls I know. It is a Rosellinia and has not as much suggestion of a Xylaria as it has of a hemp seed.

Xylaria gracilenta, as named by Sydow, is Xylaria gracillima as figured, Myc. Notes, page 771.

Xylaria Hypoxylon from the tropics, Baker Exsic. No. 300, is no form of X. Hypoxylon. It is Xylaria rhophaloides, a form of X. corniformis, for me.

XYLARIA NOTES

BY C. G. LLOYD

Number 1

CINCINNATI, O. SEPTEMBER, 1918

INTRODUCTION.—We have become very much interested in Xylarias and ask everyone who receives these papers to collect and send to us such specimens as they find. Xylarias can not be mistaken from our figures. They are common in all tropical countries and usually grow on old logs and fallen wood. They are easily collected and anyone can find quantities of them in the woods and bush. And while collecting Xylarias, pick up and send us any other fungus that comes to your notice, excepting the fleshy agarics. Specimens sent to either one of the following addresses will reach me in time.

It is not necessary that those who aid us in the work should be mycologists. We often get the best collections from those who do not study the subject, those who simply go out into the woods and pick up and send in such specimens as they note. To be sure they often send a lot of common species, but no harm is done. The more of the old ones we get the better we like it for the better acquainted we get with them. Besides, we are not bidding for novelties. We want to learn the old ones and learn them well, that is our chief ambition. Anyone residing in the tropics can help us in this work.

C. G. Lloyd,
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Twickenham, England.

C. G. Lloyd,
Court and Plum Sts.,
Cincinnati, Ohio.

THE HOLLOW XYLARIAS

It appears to me that in the present division of Xylarias which was proposed by Fries, bungled by Cooke and adopted by Saccardo, the most obvious and best characters were subordinated to those of minor importance. Theiszen has shown in detail that the present division is not workable in many cases but he does not propose any system to take its place. We have divided the species tentatively into about thirty sections, but we shall not publish them unless we learn a great deal more about them than we know now. We have never systematically hunted up all the historic Xylarias to be found in the various museums of Europe though we have photographed such as we have noted. There are a great many, however, about which we know nothing excepting the publication and figures that have been given. In cases where we have no authentic photograph we can only guess from the descriptions, which is what every one else has done, excepting these cases we record as guesses, while others appear to me to record their guesses as facts. It would be difficult for me to

state which did the worst work on Xylarias, Rehm, Hennings or Cooke. I do not believe half their determinations or figures are even approximately correct or half of what either wrote on the subject is true. Rehm and Hennings had no way of knowing and Cooke did not care.

The only creditable work that was ever done on the subject was by Theiszen. He had a thoroughly complete knowledge of Brazilian species and published a fine work. He got his views of the historical side and his names second hand, and being based largely on the publications of Cooke, Hennings and Rehm, they are for the greater part not correct, in my opinion.

The most difficult task in working with Xylarias is to get names for the tropical species. With a set of photographs of the "type" specimens I find it yet the hardest part of the task. Such work as Cooke did, leaves it in worse confusion. It appears to me that the old workers did not grasp the real distinction between Xylarias, nor the correct system of classifying them. The recent workers, Theiszen and Rehm, were handicapped by not having access to the types, and drew their conclusions largely from Cooke's work, with the natural result.

In observing Xylarias a prominent feature is the nature of the stroma. Xylarias of temperate regions have mostly a solid, white stroma, but in the tropics several species have pithy stroma and become hollow when old. In addition, the surface of these hollow species is usually even and smooth, due to the perithecia being entirely imbedded. In the temperate region species with solid stroma the surface is usually rugulose, and the perithecia partially protruding.

The word stroma as employed by us is not in the usual sense, perhaps not in the correct sense. Xylarias have a carbonous outer layer or crust and (usually) a white interior or stroma as we call it. In Xylarias that become hollow the stroma is pithy and disappears, leaving the outer layer, which we call the walls, when the plant has become hollow. The pellicle is a thin, colored layer that when young often covers the exterior and mostly disappears from old specimens. The pellicle is found on very few Xylarias excepting those in this (and similar) section when the plant has an even surface, and the perithecia are not partially protruding (moriform).

No section has puzzled as much as these "hollow Xylarias". We extend to Miss E. M. Wakefield, in charge of the Mycological Department at Kew, our best thanks for the aid she has extended to us in solving some of the problems.

Section 29.—Obese, club shape. Stroma pithy or soft, mostly disappearing from old specimens which become hollow with thin walls. Surface even, the perithecia entirely imbedded. Most species in this section have when young a thin, colored pellicle which often disappears from the mature plant.

I offer the following tentative arrangement of the species that appear to belong to this group, based on the photographs of the types,

and records, and specimens that I have. As more specimens come in and we get better acquainted with them, we, of course, reserve the right to change our opinion if the occasion warrants.

Fig. 1200.

Fig. 1200a.

Xylaria tabacina.

SUBSECTION 1, with a thick, permanent, buckthorn brown pellicle.

XYLARIA TABACINA (Fig. 1200).—When old smooth, even, center disappearing and splitting. If collected and dried young (Fig. 1200a) rugulose, hollow in center, with firm, white, outer flesh. Spores 6-8 x 20-24.

We adopt a name for the plant on the merits of publication. Kickx gave an excellent and characteristic figure of it, from Mexico, under the very appropriate name Xylaria tabacina. Cooke dug up and substituted a manuscript name, Xylaria involuta (Fig. 1201), which has no application to it, even though it is the same plant, which it probably is. That was not only irregular and "illegal," but was not right, but has since been followed by some. Berkeley changed Klotzsch's mss. name to Xylaria Telfairii, in publishing it.

Fig. 1201.

Fig. 1202.

Fig. 1203.

Xylaria tabacina is characterized by a thick, light brown pellicle which persists on the mature plant. No other species, to my knowledge, has such a thick pellicle. We have specimens from J. C. Konigsberger, Java, and Miss A. V. Duthie, South Africa. It was named from Mexico, but we do not know it from the American tropics except Kickx' excellent, colored figure. Theiszen does not include it. The "involuta" of Theiszen's work is herculea, excepting as to his synonyms which he has taken from Bresadola (originally by Cooke). The figure that Rehm gives (Hedwigia, vol. 40, pl. 8) from Brazil, as conocephala (sic) seems to be tabacina. It has no suggestion whatever of "conocephala." Rehm described it as umber in one line and bright brown in another. I believe also that Xylaria aenea (Fig. 1202), named by Montagne, from South America, is a small specimen of this plant.

Miss Wakefield advises me that Xylaria Wrightii (Fig. 1203), from Cuba, is the same. The type at Kew is of a different shape (oval) than our figures, but the "co-type" at Paris, while smaller, is similar in shape to our figure. It has the same thick pellicle and spores. Xylaria gigantea, which Léveillé distinguished from tabacina by its shape, is, I have no doubt, the same if Wrightii is. There are co-types at Paris and at Kew, which are obtuse, flattened and wrinkled as our figure 1200a. Both are young. Xylaria Novo-Guineensis, as figured and described by Rehm, from New Guinea, is probably the same, though his color term "fuscus" does not well apply.

SUBSECTION 2.—Clubs even, smooth, when young with a thin, bronze cuticle which mostly disappears when old. At first with a soft, spongy context which disappears in old specimens, when the club becomes hollow and usually splits. A very common section in the tropics, and probably embraces but a single species.

XYLARIA CUBENSIS.—This is the same as Xylaria allantoidea excepting its smaller size and it has smaller spores. The spores are 4-5 x 8-10. I found it to be quite common in Cuba, and it was very uniform in size and shape as shown in Fig. 1204. We adopt the name on the merits of its publication. Montagne gave a characteristic figure of it in la Sagra's Cuba. The spores appear narrower than the common, Cuban plant, but there is no question in my mind of its

identity. As we collected it, it had a very short stipe. Montagne shows a well developed stipe and we have specimens to correspond.

Xylaria claviformis as recently named by Starbäck is doubtless the same. The figure of Xylaria cubensis, "B. and C." issued by

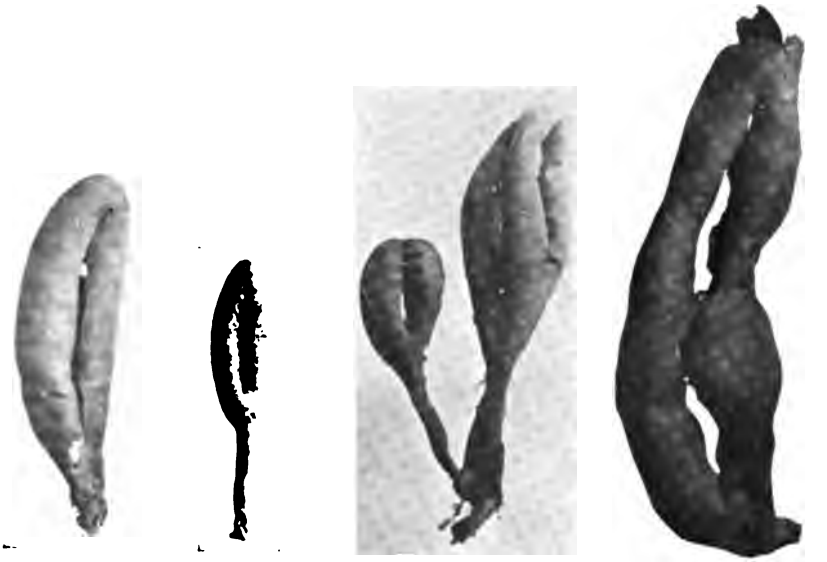

Fig. 1204. Fig. 1205.

Xylaria cubensis.

Cooke has no resemblance to it and "B. and C." never published such a species. Xylaria cubensis, as illustrated by Rehm from Brazil, can not be this plant with its slender stipe and large spores (10 x 30). I can not locate the plant in Theiszen's account of the Brazilian species, but have a specimen from Rev. Torrend.

Fig. 1206.

There occurs in the East a species (Fig. 1205) very similar to Xylaria cubensis of the American tropics, but larger and sometimes of a different shape. We believe Fries sufficiently characterized it as Xylaria siphonia, but we refer it to Montagne's name. Xylaria involuta "typica" (Fig. 1206), as illustrated by Saccardo, is this plant, though his figure does not agree with the type (Fig. 1201). Xylaria Thwaitesii from Ceylon, Xylaria reducta from East Africa, both appear the same to me. Xylaria Fockei, I would refer here from the description. I have specimens from C. B. Ussher, Straits Settlements (Fig. 1205), and have collected it in Samoa. Spores of the eastern plant are 4-6 x 10-12, a little larger than the American plant.

XYLARIA SIPHONIA.—I have a collection from Edouard Luja, Congo, Africa, which is not the same, but close. The clubs are more narrow and the spores (6 x 8) are broader. We label it as above to distinguish it in our collection.

XYLARIA ALLANTOIDEA (Fig. 1207).—Clubs usually curved with a short stem, and obtuse, surface even. Spores 6 x 14. At first with a thin, but distinct, bronze pellicle which mostly disappears when old. Stroma soft, pale, pithy, which entirely disappears when old, leaving only the carbonous walls.

Fig. 1207.

This is Xylaria euglossa of Theiszen, but it is not possible to reconcile it to Fries' description which calls for a plant with an "argillaceous" cuticle, and hard, rigid flesh, "fere lapidea". Xylaria Domingensis is surely the same plant. Xylaria clavicularis of Porto Rico, from the description, is probably the same although the stipe is too long. Xylaria Portoricensis also appears the same to me though the shape is not cylindrical.

Fig. 1208.

Xylaria Thwaitesii from Ceylon, Xylaria obtusissima from West Indies and Xylaria Zeylanica from Ceylon are all synonyms, teste Miss Wakefield. The type of obtusissima (Fig. 1208) is an obese, thick plant very different in shape from our Fig. 1207. Xylaria Zeylanica is known only from some little fragments about the size of finger-nails, which did not, however, prevent Cooke from drawing a figure of it in its "natural shape and size".

Xylaria allantoidea was from the American tropics, and the co-type at Kew is in good condition, also Xylaria Domingensis, which is surely the same and from which our figure 1207 has been made. We have specimens from Rev. Rick, Brazil.

XYLARIA OCELLATA (Fig. 1209).—Club over an inch in diameter, four to five inches long, sessile, hollow, thin and fragile, black, with remnants of a thin, brown pellicle. Ostioles sometimes marked with white spots (Fig. 1210 enlarged). Surface even, the perithecia entirely imbedded in the thin, carbonous walls. Spores 6 x 12. I have this from some unknown correspondent from Congo, Africa, in 1906, but never been able to get it named, nor have I found any specimen or description to cover it. While it has the same general nature and the same spores as the eastern form of Xylaria cubensis, surely it can not be referred to that species.

XYLARIA COLUMIFERA (Fig. 1211).—Known only from type at Paris from South America, is a hollow plant with a black, carbonous, filiform center, described as fulvous, then black. Xylaria papyrifera, named by Fries from Brazil

Fig. 1209.

Fig. 1210.

Fig. 1211.

nearly a hundred years ago and never recognized since, may be this plant. I have one collection from A. Karasek, Tanga, East Africa, which I have referred here with doubt. Its spores are 5 x 20.

SUBSECTION 3.—Plant when young with a thin, white pellicle.

Fig. 1212.

XYLARIA DEALBATA (Fig. 1212).—The type as shown in our figure is obovate and tapers to a short base. It is covered with a fragile, white pellicle like a coat of whitewash, hence the name. Spores are 10 x 40, teste Cooke, 30 teste Berkeley. I do not know if it becomes hollow, hence do not know if it belongs to this section, but I judge it does. Xylaria euglossa, from description, has a similar crust, but from description, and specimens I so determine, has solid outer flesh and is Xylaria herculea in a different section. Xylaria pyriforme, as named from South America, and Xylaria leptopus as named from the West Indies, from the description, may probably be same as Xylaria dealbata. As far as I know, Xylaria dealbata is only known from the type at Kew (Fig. 1212). It is not possible that this species is a synonym for Xylaria obovata as referred by Theiszen.

SUBSECTION 4.—Clubs black, with a smooth, even, black surface, but no pellicle. Stroma soft, becoming hollow.

XYLARIA NIGRESCENS (Fig. 1213).—Clubs cylindrical or obovate with a short, black, glabrous stipe. When old becoming hollow, and usually splitting. Surface even, black, with no pellicle. Spores 8 x 20. This is known to me only from Africa. I have a fine collection from G. Zenker, Cameroon. It was named Xylaria involuta var. nigrescens by Saccardo, and his figure is so characteristic that we use it. (Fig. 1213.) This plant is very close to Xylaria cubensis in size, shape and general appearance, but has no trace of a pellicle even when young, and the spores are much larger.

Fig. 1213.

XYLARIA LAEVIS.—We have so labeled a collection that we have from E. Cheel, Australia. It is Xylaria nigrescens as to the clubs, but the spores (4-5 x 8-10) are much smaller. It is Xylaria cubensis as to shape, size and spores, but it has no sign of a pellicle.

XYLARIA PANNOSA.—We have so labeled a collection we have from Rev. Rick, Brazil, which has a thick, pannose base like Xylaria corniformis. As to the club (otherwise) and spores (6 x 8) it is Xylaria cubensis, but it has no sign of a pellicle.

XYLARIA FAVEOLIS (Figs. 1214 and 1215).—Plant growing caespitose from a confluent base. When young cinereous, marked with large spots (Fig. 1216 enlarged). Stroma white, rather firm, but largely disappearing at length, when the plant often splits. Old plants black, with the surface pitted with small, round depressions.

Fig. 1214.

Fig. 1215.

Fig. 1216.

This is reported as common in Brazil. We have some young specimens from Rev. Rick, Brazil, and a collection from Dr. Cleland, Australia. An excellent account and photograph was presented by Rev. Theiszen under the name Xylaria plebeja. It has the same habits as this eastern species, but is quite a different plant. The disposition of the old plants to become hollow places it in this section, but the flesh is more firm and the only specimens I have are not hollow. The rough surface and spots also tend to remove it from other plants of this section.

XYLARIA OVATA (Fig. 1217).—Clubs ovate, acute, sessile. Surface even, black, with no pellicle. Stroma soft, pithy, becoming hollow. Perithecia imbedded. Ostioles not visible to the eye. Spores 4-5 x 12 (rarely 16). This was sent to us by J. P. Mousset, Lawang, Java, in October, 1911, and has remained unnamed in our collection. It seems distinct from all the preceding plants in its broad, sessile base and peculiar shape. The spores are about the same as those of Xylaria allantoidea, but this plant has no pellicle.

Fig. 1217.

ADDENDA

XYLARIA FISTULOSA (Fig. 1218).—This species, scantily known from supposed co-type at Kew and Paris, differs essentially from the previous plants in having the surface not even, but moriform, with the partially protruding perithecia. It has no pellicle. I do not know that it really becomes hollow, but Léveillé evidently thought so from the name he gave it. It came from Java. Cooke claims the spores are 3½ x 20. The photograph is all I know about it, but that is enough to show on its face that it is not a synonym for Xylaria allantoidea.

Fig. 1218.

ADDENDUM

Species unknown to me and unknowable from the "descriptions."

paraensis, Brazil, Hennings. Spores 5-7 x 18-22. It reads as if it may be Xylaria nigrescens.

australis, Australia, Cooke. A miserable, poor, mashed fragment represents this at Kew, and all I would say about it is that it probably belongs to this section.

Plant illustrated from Brazil as conocephala by Rehm has no suggestion even of conocephala. It looks very much like Xylaria tabacina.

Plant illustrated as Xylaria cubensis from Brazil by Rehm can not be correct from its long, slender stipe and large spores (10-30), but what it is I do not know.

camptospora as var. of holobapha, Java, Penzig, may belong to this section and may not. But the figure is by no means surely any form of Xylaria holobapha.

XYLARIA NIGRIPES

We present a photograph (Fig. 1219) of the sclerotium found in termite nests which we have received from W. Gowdey, Kampala, Africa. This produces a Xylaria which has been figured by Petch, Jumelle and Hoehnel. We reproduced the latter (Fig. 1220). Petch gives a full account of this fungus in his work on Termite Nests. In reading it over the most striking points from a taxonomic view, are the statements that the clubs are "at first brown, then yellowish gray". It is probable, therefore, that the species belongs to the rare section with Xylaria gramnicola that does not have a strongly carbonous crust. "The spores which are 3 x 4-5 (very small for Xylaria spores) seem to be expelled in the ascus which is resolved into a gelatinous coat that binds the eight spores together". "The conidial and ascus stages are borne on different stromata". All the above are exceptional characters in Xylaria.

Fig. 1219.

As to the name, we adopt that used by Petch which is attributed to Klotzsch, but was really due to Cooke; whom, we believe, was only guessing as we found no specimen so named by Klotzsch at Kew, and it does not appear to us to answer several features of Klotzsch's description. The synonyms that Cooke gives, however, Xylaria escharoidea, Berk. Xylaria piperiformis, Berk, Xylaria

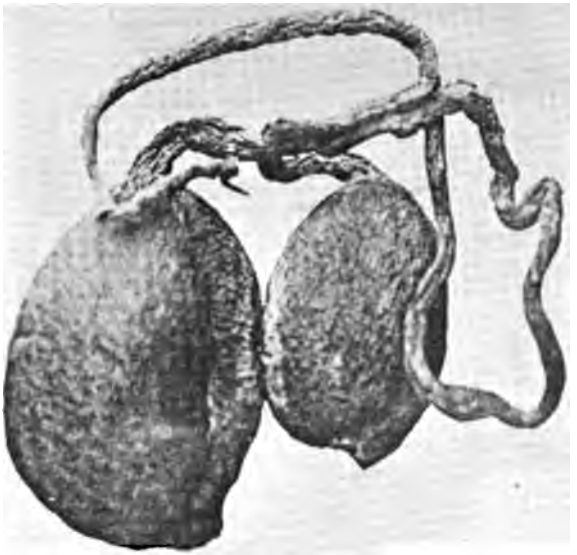

Fig. 1220.

Fig. 1221.

mutabilis, Currey (Fig. 1221) and Xylaria fragiliformis, Currey (conidial) all impressed me as one plant, Petch adds Xylaria Gardneri, which is, no doubt, correct although a larger and branched plant. He records the spores of the co-type at Ceylon as 3 x 4-5 mic. Cooke measures them 3 x 30 (sic) Petch also here refers Xylaria torrulioides, Java (Fig. 1222), which, notwithstanding its small size, the habits on termite nests, and small spores, both indicate the correctness of his view. To this list should be added, we believe, Xylaria termitum, Jumelle, surely the same. Xylaria peperomioides, Henn. (with spores 2½-3 x 3-3½); Xylaria melanaxis, Cesati (spores teste Cooke 2 x 3½); Xylaria scotica var. brasiliensis, Theiszen (from habits, termite nests, and figure, although spores are recorded 4-5 x 6-10); and possibly Xylaria rhizocola, Montagne, which is known to me only from his figure. I found no type, and spores are not recorded. The fasciculate racines shown in the figure at the base of the stipe appear to be an abnormal feature of any Xylaria. Xylaria radicans, Myc. Notes, p. 725, may also be this species, but from its much larger spores, that does not appear probable.

Fig. 1222.

Xylaria nigripes produces the conidial forms in abundance on abandoned termite nests, but the ascus forms are rarer. The sclerotia (Fig. 1219) are found also in the cavities of abandoned termite nests. Prof. Petch demonstrates their connection with Xylaria nigripes by growing the Xylaria from them under a bell glass. And Petch, Hoehnel and Jumelle have each published figures of the Xylaria growing from these sclerotia.

INTERESTING XYLARIA RECEIVED FROM CORRESPONDENTS

XYLARIA RIDLEYI, FROM JOHN GOSSWEILER, PORTUGUESE, WEST AFRICA (Fig. 1223).—This is one of the most

Fig. 1223.

Fig. 1224.

curious Xylarias that has come to our notice. We gave a short and imperfect account of the species in Mycological Notes, p. 728, but the only collection previously made is at Kew from Singapore, and named by Massee. It has no real resemblance to Xylaria obovata as suggested in our note, nor has it but little relation to Xylaria dealbata as Massee suggests. The plants as shown in our photograph are regular in form, elliptical, with a short, distinct stem. They resemble, as Massee suggests, a fruit. The crust is thin, carbonous and covered with a white, glaucous bloom. It is loose and distinct from the central carbonous stroma. The perithecia are attached to the inner side of the crust as shown in figure 1224 enlarged. They are not imbedded (or but loosely) in the stroma as they are in all other Xylarias I ever noticed. The stroma is dark, carbonous, of soft texture, and arranged around a central paler columella as shown in figure 1223. The spores are narrow fusiform with sharp ends and measure 4-6 x 28. These are much larger than Massee's record from Singapore (4-5 x 18-20) but surely the same species, and a most peculiar species at that with several features as noted above that no other Xylaria has. Mr. Gossweiler's collection is the second collection ever made.

ISARIA FLABELLIFORMIS FROM CHAS. H. BAKER, FLORIDA.—This collection is of particular interest, for it has a young plant (see Fig. 1225) of what is surely young Xylaria corniformis. Just a few days ago I received a collection from Father Rick, Brazil, embracing both. I will now have to recede from the stand I have so firmly taken. (Note 44 and Myc. Notes, p. 547) that Isaria flabelliformis could not possibly be the conidial form of Xylaria corniformis. Father Rick maintained this in his writings and I have always thought he was mistaken,

Fig. 1225.

Fig. 1226.

Fig. 1227.

Fig. 1228.

Fig. 1229.

but of course after it is (probably) demonstrated I readily admit that it was I and not he that was mistaken. I have watched the plant for many years around Cincinnati, and I never saw it develop into a Xylaria.

XYLARIA DISCOIDEA FROM REV. J. RICK, BRAZIL.—Head a concave disc, the perithecia imbedded, the ostioles strongly protruding on the convex surface. Stipe slender, from a strongly rooting base. Stroma, white, hard. Spores 8-10 x 36-40. This species appears to be endemic in Brazil though it is quite close to Xylaria pyramidata known only from Ceylon. It is so characteristic in shape, shown in our photograph, that it should not be confused with any other. We present photographs of the plant natural size, Fig. 1226, and enlargements of the upper (Fig. 1227) and lower (Fig. 1228) side and also a section (Fig. 1229) enlarged.

History: We give this new name, although we believe it has been determined under three different names. Father Theiszen referred it to Xylaria pyramidata to which it is very close, but it differs in its large spores and concave head. Xylaria pyramidata known from a single specimen (Fig. 1230) from Ceylon and named many years ago has a globose head and very small spores, recorded by Berkeley as 5 mic.

Fig. 1230.

We believe this plant to be the same as Hennings described under the name of Xylariaodiscus dorstenioides, but not having seen the specimen, the discrepancies of his work are such that we would not be justified in referring it to his name. He reports the perithecia as semi-immersed, and shows them almost free. We believe his figure is an inaccurate conception and based on this plant.

We judge from the figure that Starbäck has given that this is the plant he has named Poronia hemisphaerica, but the plant is not a Poronia, and without seeing the specimen we would not be justified in using his name. However, it seems to us from the description and figure to be exactly the same plant.

Fig. 1231.

The "cl" Rehm gave an opinion that the plant should be referred to "Xylaria agariciformis" as named by Cooke. Rehm made a very bad guess, for "Xylaria agariciformis" as named by Cooke had no suggestion of an agaric and *is* a Poronia, and as it will be noted from our photograph, Fig. 1231, has no resemblance whatever to this plant.

Cooke, who posed as a Xylaria expert and even proposed an arrangement of them, should at least have learned the difference between a Xylaria and a Poronia before engaging in such an ambitious task. No wonder when the plant drifted into Patouillard he at once discovered it was a "new species."

XYLARIA MELLISII, FROM JOHN GOSSWEILER, WEST AFRICA (Fig. 1232).—We name this from comparison with the photograph of the type (Fig. 1233). Its fasciculate habits, we judge,

Fig. 1232.

Fig. 1233.

are characteristic. For us it is close to the polymorphum group; black, rugulose, with solid stroma. The specimens have a peculiar stroma. It is solid and white at the center but pale colored at the circumference in which the perithecia are imbedded. These marked and characteristic features are not noted in the usual Xylaria description. Spores are 4 x 8, mostly smaller.

It is probable that the following are based on single specimens. Xylaria echinata, Java, described "in groups" no spores given, it seems to fit. Xylaria aspera, Maley, spores 5 x 10, is probably the same. Xylaria massula, Borneo, spores 5 x 8, may be same.

XYLARIA ECTOGRAMMA, FROM EDWIN CHEEL, AUSTRALIA (Fig. 1234).—Clubs cylindrical, black, no veil, with finely reticulate surface. Stroma subcarbonous, soft, spongy (becoming hollow, probably). Ostioles minute, arranged in lines (Fig. 1235 enlarged). Spores 5 x 10. Xylaria ectogramma was named from Australia by Berkeley, and referred to Xylaria grammica, a South American species by Cooke. The probabilities are that Cooke was wrong, and that this plant is the basis of the record of Xylaria grammica in Australia. Surely if this specimen is correctly referred to Berkeley's species, it is not the same as Xylaria grammica. This is a black plant, with faint lines, and almost even surface. Xylaria grammica is a grey plant with strongly lined surface (compare Myc. Notes, page 648). They are related to be sure, but very different. This plant is closer to the African plant Xylaria variabilis (Cfr. Myc. Notes, page 636) than to the American plant.

Fig. 1234.

Fig. 1235.

Xylaria ectogramma.

XYLARIA GOMPHUS, FROM T. HUNTER, WEST AFRICA (Fig. 1236).—This was the first foreign Xylaria named, and was published by Fries, from Brazil (and Java) in 1828. I have puzzled over the description many times, for I never saw in any museum a specimen that answered to the description. This collection from Mr. Hunter answers exactly, excepting that the stipe is not much shorter than the club. As will be noted from our photograph, the plant is "lacunose-rugulose and resembles a Morchella." We never saw another specimen of Xylaria that resembles a Morchella. We have noted specimens in the museums labeled "Xylaria gomphus, Fries," that do not accord with the description at all, and Cooke's figure (47) has no suggestion of it.

Xylaria gomphus belongs to the section with a pithy center, at length hollow, and firm outer flesh. Mr. Hunter sends also a young collection from which we can trace the changes that take place. The section of the young club is solid with a light brown, pithy center, and hard, white exterior flesh. When older (upper Fig.) the pithy center disappears, excepting a thin ring, and the white, outer flesh forms a carbonous interior ring and becomes mottled with black. Probably in very old specimens it becomes entirely black. The plants grow 4 or

5 in a cluster, with the bases of the stem grown together. The stems are jet black, dull, smooth, and have a minutely furfuraceous coat. The clubs at first have a cinerous pellicle which probably disappears from old specimens. The spores are 6-8 x 20-24. When one has puz-

Fig. 1236. Xylaria gomphus.

zled over an old description as much as I have over this original, foreign Xylaria, he is more than pleased to get a collection that answers the description, and my best thanks are extended to Mr. Hunter for the specimen.

XYLARIA NOTES

BY C. G. LLOYD

Number 2

CINCINNATI, O. DECEMBER, 1918

INTRODUCTION.—Since the issue of the first number we have probably received more collections of Xylarias than are found in any museums we have visited. The Reverend Torrend and Reverend Rick, of Brazil, have sent more than a hundred separate collections, and out of these the species are rapidly crystallizing.

We ask everyone who receives these papers to collect and send to us such specimens as they find. Xylarias can not be mistaken from our figures. They are common in all tropical countries and usually grow on old logs and fallen wood. They are easily collected and anyone can find quantities of them in the woods and bush. And while collecting Xylarias, pick up and send us any other fungus that comes to your notice, excepting the fleshy agarics. Specimens sent to either one of the following addresses will reach me in time.

It is not necessary that those who aid us in the work should be mycologists. We often get the best collections from those who do not study the subject, those who simply go out into the woods and pick up and send in such specimens as they note. To be sure they often send a lot of common species, but no harm is done. The more of the old ones we get the better we like it for the better acquainted we get with them. Besides, we are not bidding for novelties. We want to learn the old ones and learn them well, that is our chief ambition. Anyone residing in the tropics can help us in this work.

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Twickenham, England.

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Cincinnati, Ohio.

XYLARIA CASTOREA, FROM REV. J. RICK, BRAZIL (Fig. 1324).—We are unable to locate this species in Theiszen's account of Brazilian Xylarias. It belongs to the "polymorpha" group with solid white stroma and rugulose surface. There are in the tropics a number of so-called species that correspond to Xylaria polymorpha, excepting they are smaller and often grow fasciculate. We have already considered several, Xylaria plebeja on page 687, Xylaria clavus on page 688, and Xylaria tuberiformis on page 678. All these, however, have rather large spores. Xylaria castorea has very small spores, mostly about 4 x 8 mic.

I can not agree with Theiszen's reference of Xylaria castorea as a synonym for a plant he calls (in error I think) Xylaria plebeja

(Cfr. Myc. Notes, p. 687). Nor do I know Xylaria castorea from the United States, where misrecorded by Peck. His record was based

Fig. 1324.

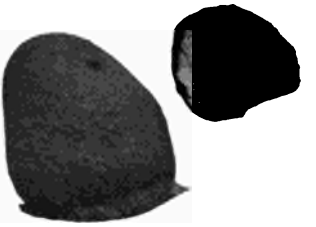

Fig. 1325.

on Xylaria fusca. We have a second collection from Rev. Rick, which is perfectly globose and sessile as shown in Fig. 1325.

XYLARIA CHORDAEFORMIS, FROM REV. C. TORREND, BRAZIL (Fig. 1327).—Stem filiform, black, carbonous with no white stroma. Perithecia globose, few almost free. Spores 8 x 24-28.

Fig. 1326.

Fig. 1327.

Fig. 1328.

While the description is the same as filiformis, excepting the much larger spores, this is a larger plant and grows on wood. I presume, however, it is the basis of the Xylaria filiformis record in Brazil. A liberal interpretation might hold it as a large spored and large form of Xylaria filiformis, but its different habitat would for me indicate the contrary. We present in contrast Fig. 1326, Xylaria filiformis, enlarged sixfold, and Fig. 1328, Xylaria chordaeformis, same enlargement.

XYLARIA PISTILLARIS, FROM K. MIYABE, JAPAN (Fig. 1329).—This plant agrees with Xylaria polymorpha in the essentials, viz.: Context, spores (6-7 x 24) and perithecia. It differs from the usual form in its regular shape and stipe, but Xylaria polymorpha is so variable as to form that it would be difficult to maintain it on this character.

Fig. 1329.

When Persoon first sorted out the species he gave a figure (Obs. t. 2, f. 5) which he included in X. polymorpha and which is similar in shape to this Japanese plant. It is a rare thing in Europe. Nitschke, who is the best authority on European Pyrenomycetes held Persoon's figure to be Xylaria longipes, differing from X. polymorpha in smaller spores (5-6 x 11-14) and close to X. corniformis, but broader spores (4-5 x 12-15 in corniformis). On the spore measurements the Japanese plant can be referred to neither longipes nor corniformis, with which it closely agrees as to shape and appearance. Xylaria corniformis has a pannose base. It is evidently the plant called Xylaria pistillaris as a form of X. polymorpha, but is a rare plant in Europe.

XYLARIA FILIFORMIS, FROM JOHN DEARNESS, CANADA (Fig. 1330).—Stem filiform black, carbonous without white, stroma. Perithecia few, globose, almost free. Spores 5 x 16. It was referred by Ellis to Xylaria filiformis of Europe and distributed in his exsiccatae (No. 1948). It is rarely found with perithecia, but sterile specimens have been distributed (Ravenel 2–55 and Ellis 163) and several exsiccatae in Europe. Albertini and Schweinitz named the species and gave a figure of it. If it is the same as this as it probably is, the figure is inaccurate in showing the perithecia more imbedded than they are. Several have found the sterile stems in Europe, but my impression is that the fertile plant is very rare. Traverso, in Italy, is the only writer I have noted who seems to have seen the fertile plant, and his figure and spore record accords with our plant. Xylaria filiformis is peculiar in its habits, growing on herbaceous stems on dead leaves. Our Fig. 1326 is an enlargement of the top of this little plant, and a fine fruiting

Fig. 1330.

specimen. We believe Professor Dearness and Peck are the only ones who have collected it in this country in fruit.

XYLARIA APICULATA, FROM REV. J. RICK, BRAZIL (Fig. 1334).—We gave figures and an account of this species on page 676. These specimens from Rev. Rick are so fine and so well developed that they merit additional illustration. The striate surface, as shown so prominently in our enlargement (Fig. 1331), is a more marked feature of the species than the (usually) apiculate tip from which it gets its name. We have gone over nine collections that we have and each shows this feature, though not so marked as in this specimen just received. The spores of the specimens are 6 x 20, but we can not note any indications of a faint septum that we have seen in other specimens.

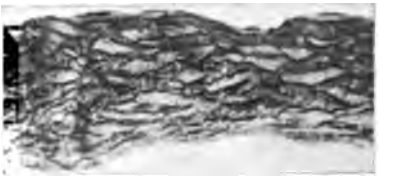

Fig. 1331.

Fig. 1332.

Fig. 1333.

Fig. 1334.

XYLARIA APICULATA, FROM REV. C. TORREND, FROM MADAGASCAR.—Compared to the American plant, they are not exactly the same, but too close to be held as different. The striations on the surface are much less pronounced, and are not true fissures, as they often are on the Brazilian plant. The spores, 5 x 10, are smaller. They run from 6 x 12 to 6 x 20 in Brazil. Perhaps the Madagascar plant should have a separate name on account of its smaller spores. However, we do not attach much importance to exact spore sizes in Xylarias. We have seen them vary as much as

10 microns on the same slide. In a general way species are characterized by small, medium or large spores, but that is about as much specific value as Xylaria spore sizes have.

XYLARIA APICULATA, FROM REV. C. TORREND, BRAZIL.—Contrasted with the figure of the specimens received from Rev. Rick, the branched specimens (Fig. 1333) from Rev. Torrend could well be taken as a different species. It has been called Xylaria arbuscula, but is evidently only a branched form of Xylaria apiculata. While it is the only specimen we have seen, we so consider it for two reasons: First, Rev. Torrend sends also in the same collection simple clubs that can not be told from the figure 1334. Second, each club of this branched specimen has the same characters as the simple clubs. The spores are slightly shorter ,as pointed out by Rev. Theiszen, but no importance can be attached to a few microns variation in the length of a Xylaria spore.

XYLARIA ARBUSCULA, FROM REV. J. RICK, BRAZIL.—Since the above was received from Rev. Torrend, we have another nice collection from Rev. Rick (Fig. 1332). As stated, Xylaria arbuscula is for me only a fasciculate form of Xylaria apiculata, but a convenient name for this form. We have but little doubt but that Xylaria biceps var. botryosa, Rehm, Xylaria Pattersonii, Mass., Xylaria fasciculata, Speg., Xylaria coronata, West., are all synonyms for Xylaria arbuscula. Also from the description probably Xylaria diceras, Lev., Xylaria Botrys, Pat., Xylaria Trianae, Lev., and Xylaria ruginosa, Mont.

XYLARIA HERCULEA, FROM REV. C. TORREND, BRAZIL (Fig. 1335).—Clubs 4-10 inches long, ½-1 inch thick, tapering into a short stipe at the base, hollow, with firm layer of outer stroma. Stroma white then fuliginous. Surface even, black with a faint bronze cast, very hard. Perithecia imbedded, the ostioles minutely papillate. Spores 6-8 x 20-24.

This is probably the largest Xylaria that grows and was well named. The old club contracts and becomes hollow in the center. In some specimens it splits. Our spore record is from the small specimens on the plate. In a subsequent sending (the large specimen) the largest spore we find is 20 mic. and most are about 16 mic. long.

We have received from Marcial R. Espinosa, Chile, and from J. A. Stevenson, Porto Rico, what we take to be the young specimens of this species, but we are not certain. They have a conspicuous, gray pellicle which (if we are correct in referring them) disappears when old. We are disposed to think it is what Fries (not Theiszen) called Xylaria euglossa, but the name and description of Miquel are so sure and appropriate that we do not use Fries' name. Nor is it at all certain. Theiszen gives an excellent plate (4) of this plant, under the name Xylaria involuta, but the evidence is that involuta is the same as tabacina (see page 3). Xylaria herculea is close to Xylaria gomphus in its spores, flesh and young pellicle, but differs as shown in our photograph. We have one collection from Rev. Torrend that is obovate instead of cylindrical. We refer it here as it has hollow stroma and same spores. Xylaria lignosa, recently named from the West Indies, appears to me to be the same. Spores are given as smaller. Xylaria Hercules as named by Spegazzini seems to be Xylaria gomphus, rather than this plant.

Fig. 1335.
Xylaria herculea.

XYLARIA SCRUPOSA, FROM T. HUNTER, WEST AFRICA (Fig. 1336).—Clubs 3-6 in. tall, 1-2 cm. thick, round or sometimes flattened, tapering to a rather blunt apex, or sometimes obtuse, tapering at the base to a short, almost smooth, wrinkled stipe. Surface black or dark brown with very thin pellicle, wrinkled in drying. Stroma white, hard with a pithy center that becomes hollow. Perithecia imbedded in the white stroma. Ostioles papillate minute, black. Spores 6-8 x 20-24.

Fig. 1336
Xylaria scruposa.

Fig. 1337.

We are unable to locate a valid name for the plant, though we have specimens from Rev. Torrend and Rev. Rick, Brazil, J. P. Mousset, Java, and T. Hunter, Africa, and it is certainly common and widespread. We adopt (rather than call it a "new species") a name applied to it by Theiszen at least in part. We hardly believe it is the plant so named by Fries, for there are several discrepancies in his description, as "long, rooting base," "solid, grey flesh." Nor are we sure that the small plant called Xylaria scruposa as figured by Theiszen is the same as Theiszen holds. There is one characteristic of the plant that is not noticeable excepting under a lens. The wrinkled surface is dark brown, the minute ostiole black. This can be seen on our enlargement (Fig. 1337), by close observation, and is a feature of all our collections.

XYLARIA ANISOPLEURA, FROM REV. C. TORREND, BRAZIL (Fig. 1338).—Clubs oval or subglobose from a short stipe. Surface black, moriform from the protruding perithecia. Stroma solid, white. Spores mostly 8 x 24-28, rarely 36-40 mic. long.

Fig. 1338.

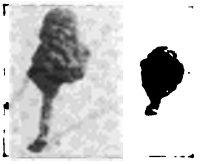

Fig. 1339.

There is no question as to the determination of this species. Our Fig. 1339 is of the cotype at Kew. It seems frequent in the American tropics, and we have it from Japan (Cfr. Note 412). It is probably widely distributed, but little is known about foreign Xylarias at present. The length of stipe and club varies, but usually both are short. The following appear to us to be the same: fragariaeformis and argentinensis as named by Spegazzini; Huberiana, Brazil, Hennings; Schweinitzii, Myc. Notes, p. 635 (not Berkeley); strobiliformis, Madagascar, Hennings; Xylaria polymorpha var. acuminata of Stärback seems to be abnormally shaped specimens, and surely not a form of X. polymorpha with its moriform surface. Prof. Petch advises me that Xylaria tuberiformis, Myc. Notes, page 678, Fig. 1011, also should be referred to this species.

The following species appear to belong to the same section and same general type of plants. Very little is known of them and there

Fig. 1340.

Fig. 1341.

Fig. 1342.

is not much use in guessing, but we itemize what seems to be their most salient features: smilacicola, South America, acute tip, large perithecia on Smilax stems; elegans, South America, acute tip, large spores; rhizophila Australia, small perithecia; platypoda, echinata, verruculosa and aspera, prominent ostioles; massula and phosphorea small spores; Ramulata and bertioides, minute plants on stems.

XYLARIA TORQUESCENS, FROM T. HUNTER, WEST AFRICA (Fig. 1340).—Saccardo named this from Africa and characterized it by having the perithecia in lines (Fig. 1341, enlarged). We referred it (p. 636) to Xylaria variabilis (also from Africa), but these specimens which correspond well to Saccardo's figure are evidently a plant of different stature from Xylaria variabilis. We make the spores of this plant 4-5 x 12-14. The spores of variabilis are not known. Xylaria ectogramma of Australia has the same peculiar, lined surface and spores as this plant, but has entirely different stature and size and we can not believe it is the same species, although it may be. Compare the figure of Xylaria ectogramma on page 15.

XYLARIA COOKEI, FROM REV. J. RICK, BRAZIL (Fig. 1342).—This plant appears in Theiszen's work as Xylaria multiplex, evidently determined by comparison with Cooke's figure. As explained under Xylaria multiplex, page 26, there is no resemblance whatever to the species and I do not know where Cooke got his erroneous idea. I noted no such plant at Kew, but feel there was no excuse for it, as there is an unquestioned type of Xylaria multiplex at Kew. I, therefore, name it Xylaria Cookei in honor of Cooke's mistake. As a matter of fact, however, I believe it is best classed as a form of Xylaria apiculata. While it differs much in general appearance it has exactly the three same, essential characters as Xylaria apiculata, viz., the fissile surface, apiculate clubs (though the apiculus is very short) and same spores, 6 x 20-24. Xylaria corniculata from Africa and Xylaria Fejeensis from Fiji seem very close, if not the same.

XYLARIA MULTIPLEX, FROM REV. J. RICK, BRAZIL.—Clubs slender, black, branching above with a few dichotomous branches. Dense, villose below. Perithecia strongly moriform on the slender branches. Spores 4-5 x 10-12.

From the meager data we have on the subject this occurs in tropical America and appears to grow only on various fruits, particularly the large pods of the Leguminosae. It is very close to Xylaria Hypoxylon of Europe, but we believe when well known will be found entirely distinct.

HISTORY.—In the old Weigelt and Sieber exsiccatae were some foreign fungi named by Kunze and published mostly by Fries (1830). I do not know the dates of these old exsiccatae. They are not cited in Lindau. I have seen a few specimens from them in various museums, but I do not know whether these two as cited are the same exsiccatae or different. Several of the foreign species get their names from specimens in these exsiccatae, Cyclomyces fuscus, Polyporus modestus, Stereum luteo-badium and Xylaria multiplex. There is a specimen of Xylaria multiplex from Weigelt's exsiccatae at Kew, so the plant should not have been confused by anyone at Kew. Berkeley had it right in his Cuban records. But Montagne renamed it Xylaria xanthino-velutina (Fig. 1343), which he changed to Xylaria ianthino-velutina, and under this name it was considered by Theiszen, and has been mostly recorded. Léveillé records a plant from Java as "Xylaria multifida, Kunze," and Cooke illustrated Xylaria multiplex under Léveillé's misname, although a specimen of Kunze's plant is at Kew correctly named. Then to add to the confusion Cooke illustrated a plant as "Xylaria multiplex, Fr.," that

has not the most remote suggestion of it, and from Cooke's figure Theiszen evidently gets his idea.

SYNONYMS.—Xylaria ianthino-velutina and multifida as above. Xylaria Culleniae as to Cooke's figure, not type. Xylaria dichotoma as to Cooke's figure, not type. Xylaria Apeibae as to Rehm's figure, not type. Xylaria ianthino-velutina, var. dichotoma of Theiszen. Xylaria monilifera as to Cooke's figure, type not noted by me.

PROBABLE SYNONYMS.—Xylaria juruensis, more simple and not on fruit. From descriptions, Patrisiae, Brazil, Hennings and adscendens, Fries, Brazil.

RELATED PLANTS.—Xylaria dichotoma, very similar, but smaller and from ground. (Syn. Apeiba probably and tenuissima, prob.) Xylaria Culleniae, Ceylon, as to Cooke's figure and one specimen of type, but as to both ? . Xylaria flexuosa, China, has much smaller spores, 4-5 x 6. Xylaria rhizodes, Corsica, grows in dense clusters.

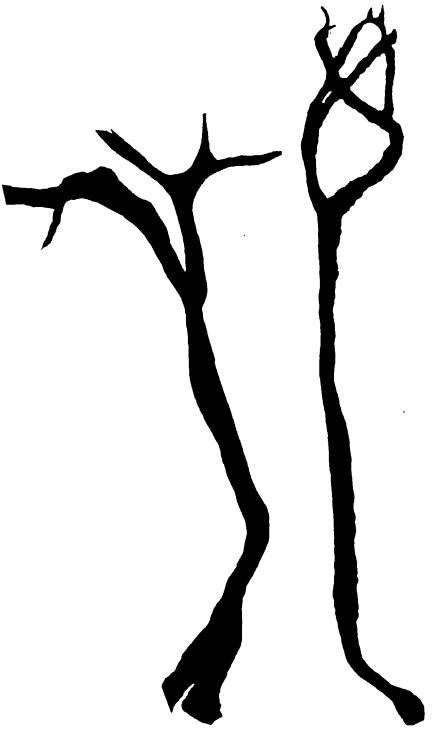

Fig. 1343.

Fig. 1344.

XYLARIA OBESA, FROM REV. C. TORREND, BRAZIL (Fig. 1344).—Plant large, 2-4 inches broad, polymorphic in shape, sessile. Surface black, dull, uneven, but not moriform. Stroma solid, white or slightly fuliginous. Spores 5-8 x 12-16.

This has all the characters of a large, obese, tropical form of Xylaria polymorpha, excepting its small spores. It could be held as a small spored form. Originally from tropical Africa, this is the first record in the American tropics. Theiszen does not have it.

XYLARIA LANCEA, FROM REV. J. RICK, BRAZIL.—When Theiszen wrote his article on Xylaria he considered as "Xylaria Thyrsus," two plants. First, a plant with the head ovoid-conical, dark greyish, soft context, "afterwards black." Second, a plant entirely carbonous, with almost free perithecia, on an entirely carbonous stem. He illustrated the second plant and this which we saw in his exsiccatae we renamed Xylaria Theiszenii (Myc. Notes, p. 677). We have just received from Father Rick fine specimens of the first plant, and we believe it not only different from Xylaria Theiszenii, but neither has it any resemblance to Xylaria Thyrsus,

Fig. 1345.

Fig. 1346.

Fig. 1347

which is not a Xylaria. Rehm advanced the opinion that Xylaria Theiszenii is the same as Xylaria chordalis, named by Fries. If one will compare the figure of Xylaria Theiszenii, Fig. 1347, with the figure of the type of Xylaria chordalis (Large Pyrenomycetes, page 12) he will note what a bad guess Rehm made. They have no suggestion even of each other, and Xylaria chordalis is a Thamnomyces.

XYLARIA LANCEA.—Rooting in the ground from a thick rhizome. Stem glabrous, tortuose, 6-8 cm. tall, black, carbonous.

Clubs short, 1-1½ cm., pale grey, acute. Perithecia few, protruding. Ostioles protruding. Spores 12 x 24.

The pale color of the club, due to greyish pubescence of the surface, is a feature unknown to me from any other Xylaria. The species is quite close to Xylaria Theiszenii (Cfr. Myc. Notes, p. 677), but differs in the above character, absence of filiform tip to the club and thicker spores. Our enlarged photograph showing the pubescent club is characteristic of the species, and distinguishes it from Xylaria Theiszenii, which is jet black and glabrous. Rarely the stem is branched, bearing two clubs as shown in one of our figures.

Fig. 1348.

Fig. 1349.

Fig. 1350.

Since the above was written I have a letter from Rev. Rick who thinks that Xylaria lancea and Xylaria Theiszenii are the same species. He states they can always be found together and that the greyish pubescence of Xylaria lancea is the remains of the conidial state. Perhaps he is right, but to my mind the confluent, imbedded perithecia of one is an essentially specific difference from the free perithecia of the other. We present above photograph (Fig. 1346) of Xylaria lancea, and in contrast (Fig. 1347), photograph of Xylaria Theiszenii. If it develops that they are one species the name Xylaria Theiszenii will stand.

XYLARIA LUXURIANS, FROM REV. J. RICK, BRAZIL (Fig. 1348).—Clubs branched in a fasciculate manner. Branches apiculate, nodulose, with the strongly protruding perithecia. Perithecia free, singly on the branches or confluent, not covering the rhachis. Ostioles prominent. Spores 6 x 20-24. This has much in general appearance in common with Xylaria arbuscula, and at first sight appears to be imperfectly developed specimen. We believe not, however, for the perithecia are larger, free and very different. We present a figure of the plant, natural size, and an enlargement (Fig. 1349) of a branch.

We received this plant from Rev. Rick, labeled Xylaria carpophila var. luxurians, and on comparison with Rehm's crude figure we are convinced it is the same plant, though without the suggestion we should not have so referred it. Surely it has no connection with or relation to Xylaria carpophila of Europe. Rev. Theiszen's figure of the plant, while evidently the same, is not as characteristic as of most of his species.

XYLARIA BIPINDENSIS, FROM DR. GEORGE ZENKER, WEST AFRICA (Fig. 1350).—Clubs cylindrical, 2-3 inches long, 4-5 mm. thick. Stem short, ½-1 cm., black, smooth. Surface even or slightly rugulose. Stroma solid white. Perithecia not protruding. Spores 4-5 x 8-10.

This grew on a log. The specimen selected for illustration has several of the clubs broken off. Excepting as to shape it is allied to Xylaria castorea, polymorpha, etc. It seems that a species such as this should have been named, but we are unable to find it. The truth is that the Xylarias of the tropics are known from very few collections. The most of the fungi in olden days were collected by collectors of flowering plants, and they did not pay much attention to these black growths on logs, and probably did not know they were fungi.

XYLARIA PALLIDE-OSTIOLATA, FROM GEORGE ZENKER AND W. SMALL, AFRICA (Fig. 1351).—Clubs variable as to shape, simple or two or three from the same stipe, acute or obtuse, black or brownish-black, with no pellicle. Perithecia are moriform, strongly protruding with the ostioles mostly circled with white. Stipe glabrous, rugulose, sulcate, variable as to length. Stroma solid, white. Spores about 6 x 24.

Hennings named this from Cameroun, Africa, and his descrpition fairly covers it. The pale ostioles are not as prominent as the name would indicate and can only be noticed with a lens. The collections from Messrs. Zenker and Small are not exactly the same, and we were at first disposed to hold them as different. Mr. Small's plant is black. Mr. Zenker's brownish-black, noticeably paler, as they are placed side by side. After we had our cuts made to publish them as two species we decided the difference was not sufficient.

Our enlargement (Fig. 1352) will show the white ostioles from which the plant is named.

Fig. 1351.

Fig. 1352.

XYLARIA MORIFORMIS, FROM T. HUNTER, WEST AFRICA.—Clubs, cylindrical, acute, black, strongly moriform.

Fig. 1353.

Fig. 1354.

Stipe short, dark, velutinate. Stroma solid, white. Perithecia half imbedded, largely protruding with prominent, papillate ostioles. Spores 6-8 x 24-28 (Fig. 1353).

This species is strongly characterized by protruding perithecia, forming a surface like that of a mulberry. The white spots shown in our photograph seem to be calcareous deposits around the ostioles. They are present on some perithecia and no indications of them on others. At one time we placed considerable stress on the "white rings" around the ostioles of some tropical species, but have concluded they are in the nature of lime deposits and not of constant value. At first we were inclined to refer this to Xylaria aphrodisiaca, as named by Currey, from Africa, on a general resemblance to his figure, but his description, "surface inordinate areolate" does not apply at all. Still it may be that plant. There is a possibility also that it is the same plant as Xylaria pallide-ostiolata (see page 29), but its general size and shape and much more strongly protruding perithecia seem to justify keeping it distinct.

XYLARIA FAVEOLIS, FROM REV. C. TORREND, BRAZIL (Fig. 1354) (Compare also page 9).—We are glad to get mature specimens, as all we have had heretofore were immature. The species is strongly characterized by the rough surface and spots, and we feel is well named. There is little to add to our account given on page 9, excepting that the spores measure 4 x 10. It seems to be a frequent species in Brazil, and it is strange someone had not given it a name. In many features it is the same as Xylaria Cubensis, but the "spots" will distinguish it at once.

Fig. 1355.

We present an enlargement (Fig. 1355) of a portion of a club showing the rough surface and spots that characterize the species. It is a feature of every specimen we have, and a character we do not know in any other species.

XYLARIA CRISTULATA, FROM REV. J. RICK, BRAZIL (Fig. 1357).—Clubs cylindrical or compressed, usually branching above in a cristated manner, sometimes simple. When old, hollow, fragile. Surface black, marked with little black tufts of short hairs (Fig. 1356, enlarged). Stem 2-4 cm. long, rugulose, wrinkled, almost glabrous or slightly pannose at the base. Perithecia not protruding. Spores (teste Theiszen), 4-5 x 11-16.

Fig. 1356.

This is a common species in Brazil, and was finely illustrated (Plates 2, 3 and 8) by Theiszen under the name Xylaria Hypoxylon. It is not the European plant, which has a hairy stem and is a smaller plant, and does not

have these peculiar tufts of hairs on the club. I have no ripe specimen, but I think these tufts are the immature ostioles. The peculiar crested branches at the top are conidial bearing only and do not

Fig. 1357.
Xylaria cristulata.

develop perithecia. I think this is a tropical plant only, although I remember seeing in Peck's collection a plant that reminds me of it, which he had referred to Xylaria cornu-damae.

ISARIA FLABELLIFORMIS AGAIN.—In reading over our article on page 12 of Xylaria Notes, we notice that we failed to record the very point that we intended. While we think now that Xylaria flabelliformis is a conidial form of Xylaria corniformis, we do not believe that it transforms into the Xylaria condition as most conidial Xylarias do. In other words, we believe that Xylaria corniformis bears its conidial and asciferous spores on different stromata, as Petch has demonstrated is the case with Xylaria nigripes. We also have a letter from Professor Petch expressing the same view. He states that from the wood bearing these Isaria forms he has grown imperfect Xylarias, but has never succeeded in perfect development.

Xylaria Thwaitesii.—We note that we gave this as a synonym for Xylaria cubensis on page 5 of our Xylaria Notes, and for Xylaria allantoidea (teste Miss Wakefield) on page 6. The latter is an error (of ours) as we are advised by Miss Wakefield, who considers Xylaria Thwaitesii as a valid species.

Xylaria fragiliformis, page 11, is an error for Xylaria flagelliformis.

THE MYTHS OF MYCOLOGY

AS NOTED BY

C. G. LLOYD

Part 1.

CINCINNATI, O. DECEMBER 1917.

It is my belief, and I think it will so impress anyone who investigates the history of mycology, that there has probably not been another subject that has been so crudely, blunderingly, carelessly, and inaccurately exploited as this subject. I expect to give a series of papers illustrating this, and I do it, believing that the plain situation should be set forth.

Outside of the early works of Persoon and Fries, there have been no practicable books printed on the subject by which a local worker could identify the fungi that he meets. Fries' Hymenomycetes Europaei, completed on his eightieth birthday, was the last workable book issued, and that is of much service only in determining the Agarics of Sweden. However, this is not Fries' fault, but rather that of the situation in Mycology.

Among all our modern books, I do not recall one that is practicable. The works of the English mycologists, particularly Cooke, Massee, and Smith, are simply cumulative publications, constituted largely of mistakes. There has been no real student of English mycology since the day of Berkeley. There is more truth in the old and original account in Berkeley's Fungi, Volume 2 (Cryptogamic), of Hooker's English Flora (1836) than there is in any book on the subject since issued in England.

In this country we have nothing whatever that is creditable. Hard's book is a good presentation of a few common species, but Hard never had any very extensive, critical knowledge of the subject. Marshall's book presents some very good photographs and figures, but the author of the text was woefully lacking in familiarity with the plants. A number of years ago, Atkinson got a little preliminary idea of the subject by sending dried specimens to Bresadola and Morgan, but his book is more noteworthy for what it omits than what it includes. I am told that Atkinson, in the years that have intervened since he wrote his book, has steadily been working with the Agaric subject, and no doubt at the present time could make a better presentation of it. Let us hope for his own sake, as well as that of science, that he will not fail to do it. McIlvaine's work was in the main a compilation of Peck's descriptions, and as nearly all compilations, it is of little practical use. McIlvaine was a mycophagist, not a mycologist.

Cooke's Handbook of Australian fungi is perhaps the worst textbook (on fungi) that was ever published. It is my belief that if the species were critically examined, one half of the book would be found not true, and not half the recorded specimens correctly determined. That it is absolutely impracticable is evidenced from the results, for while many specimens are received from Australian correspondents, not a single Australian student has ever been able to determine his specimens even approximately from the Handbook. Rarely is a specimen received from Australia correctly determined.

Sur ce sujet, un seul traité systématique a été publié en France, la Flore de Quélet, parue en 1888, mais dont l'édition est épuisée. Quélet en France, Schroeter en Silésia, sont, si je ne me trompe, les deux seuls auteurs en Europe qui aient écrit des ouvrages composés de première main et basés sur observations personelles. A ce double point de vue leurs livres ont une vraie valeur. Mais Quélet a gâté un ouvrage, d'ailleurs excellent, en "créant" un système nouveau et tout à lui. On n'y peut rien trouver dans recherches excessives; le jeu n'en vaut pas la chandelle. Tout y'est embrouillé; les noms génériques sont changés, l'ordre des genres est bouleversé, l'ouvrage en est devenu un vrai fouillis, un tohu-bohu.

Ses associés et collaborateurs en France, membres de la Société Mycologique,

dont il était le president, ont eu l'heureuse idée d'abandonner le systême et la nomenclature de Quélet; leurs listes, pour la plupart, suivent le systême de Fries. Hors de France, peu de mycologistes donnent la moindre attention à la réforme (?) de Quélet. Je me suis laissé dire toutefois que l'un d'eux d'est donné la peine de publier une "Concordance" où, en regard des noms adoptés par Quélet, il donne leur traduction en langage mycologique ordinaire. Cette concordance a toute la valeur du "Dictionnaire de l'Argot Parisien" qui se vend dix centimes sur les Grand Boulevard.

Murrill has just announced that he has prepared a small pamphlet "containing the equivalents of his names in Saccardo's nomenclature" which he will sell for twenty cents. The price is excessive. It is not worth it, when one can buy a dictionary of Parisian slang of just as much use, for two cents.

The subject is supposed to have become an obsession with me, but I believe that the irresponsible work that is done in mycology is chiefly due to one cause. In books on this subject there has gradually arisen a system whereby a personal name is added to each plant named. It was unknown in the days of Persoon, and was not used in the greatest book that was ever written, Fries' Hymenomycetes of Europe. It has been rigidly followed by most recent workers until it has become a standing scandal. The chief and only aim apparently of most workers nowadays is to attach their names to the names of the fungi, and they get up all kinds of schemes, excuses, and juggles in order to do it. Of course, if we charged them with it they would assume an air of virtuous indignation and assert that no scientific man would be influenced by such small vanities, and yet with very few exceptions, they all practice it. To be sure, there is very little material reward given to those who study mycology, excepting a personal gratification in learning something that very few know, and about which the great mass of humanity not only knows nothing, but cares less.

Le mal que l'on a fait vit toujours après nous;
Mais le bien, trop souvent, avec nos os s'enterre.

Ce proverbe assurément s'applique aux mycologistes. Venons aux faits. Le meilleur travail sur le genre Xylaria a été publié par le Rev. P. Thiessen; il est le seul qui ait jamais en une idée nette espèces Brésiliennes mais le Père Thiessen n'a pas visité les musées ou sont conservés les spécimens historiques. Il a basé ses deductions sur les "descriptions" de Saccardo et sur les planches fort inexactes de Cooke, Rehm et Hennings. En conséquence, bien que ses espèces soient parfaitement définies, il leur a parfois appliqué un nom qui ne correspond pas au spécimen type. Quant à sa liste de synonymes, elle est plus souvent fausse que juste. On ne peut lui en savoir mauvais gré; il a faite de son mieux et il a fait mieux que bien d'autres avant lui. La faute en est au pauvre travail de ses prédecesseurs, Cooke, Rehm et Hennings. Nous l'avons souvent répéte: Mieux vaut cent fois n'être pas informé que de l'être mal. Si le travail de ses devanciers avait été à peu près médiocre la plupart des conclusions de Thiessen sur les Xylarias eussent été correctes. Thiessen connait fort bien les Xylarias du Brésil et il nous en a donné une étude excellente et vraiment pratique qui permet de la suivre sans crainte d'erreur.

Il en est tout autrement de Léveillé. En 1845 il fit une course à Leyde, il y passa deux jours. Dans les collections de cette ville il trouva un nombre de spécimens innommés provenant surtout des Indes Hollandaises. Je crois que Léveillé emporta ses spécimens à Paris et les mit à profit pour annoncer au public une série d'espèces nouvelles dont lui même ignorant le nom mais qu'il nomma à tout hasard. Il alla plus loin et appliqua les mêmes noms spécifiques à un nombre de spécimens du Muséum de Paris. Dans maint cas ces dénominations sont évidemment fausses. Malheureusement quand les spécimens de Leyde ont disparu, on considére encore comme typiques, les spécimens par lui dénommés au Muséum de Paris. Ils ne sont rien moins que typiques et en bien des cas ils ne se rapprochent même pas du vrai type. Un travail si frauduleux ne fait que compliquer un sujet déjà fort complexe.

J'ai passé quatre semaines entières à Leyde pour essayer de remettre les choses au point et réparer les bourdes commises en deux jours par Léveillé. Mes efforts ne m'ont satisfait qu'à demi. Bresadola, lui aussi, a dépensé un temps considérable pour éclaircir ce gâchis; ses conclusions ne sont pas toujours les miennes.

Durant son court séjour à Leyde, Léveillé n'identifia aucun des spécimens et ne laissa aucune indication pour les distinguer. Dans son ouvrage il se borne à faire mention de vieilles étiquettes qui pour la plupart ont disparu. Si les "types"

indiqués sont encore au Musée de Leyde, il est désormais impossible de les reconnaître. Le Directeur du musée l'autorisa-t-il à nommer ces spécimens et à en publier la liste, j'en doute fort. Mais en ce cas il est étrange pour le moins que ce Directeur ne l'eut pas prié de laisser pour chacun une marque distinctive quelconque qui eut permis à d'autres de le reconnaître. Dans ces deux jours passés à Leyde, Léveillé a fait plus de mal à la mycologie qu'on en pourra réparer dans un siècle d'études consciencieuses; et tout cela grâce à son désir vaniteux de passer pour auteur d'espéces nouvelles. Qui songerait que l'auteur de ce gâchis, n'avait même pas une connaissance véritable des quelques espèces déjà connues et nommées de son temps? C'est vraiment à perdre patience avec ceux qui maintiennent encore qu'on doit donner à ces vielles élucubrations la précédence de priorité sur d'autres études consciencieuses.

Dans les Philippines, par exemple, on recontre un Fomes que Léveillé a dénommé albo-marginatus; ce Fomes n'indique pas la moindre trace d'une bordure blanche; il est orange et de couleur très uniforme. Le même champignon parvint à Berkeley et Hennings qui alors ignoraient que Léveillé lui avait déjà donné un nom spécifique. Le croyant en présence d'une espèce nouvelle. Berkeley lui donna le nom fort propre de Fomes kermes par allusion à la teinture organique connue sous ce vocable. On vient nous dire maintenant qu'il faut rejéter un nom si juste donné par Berkeley, Léveillé ayant la priorité. Ce serait folie de vouloir ainsi perpétuer toute sorte de bêtises sous prétexte de priorité.

Dans sa passion de vouloir être éminent en mycologie, Léveillé laisse assez souvent passer le bout de l'oreille. Ses fraudes malhonnêtes sont vraiment cousues au fil blanc. Pour en finir avec lui, relatons un dernier fait. Il a l'impudeur de baptiser de son nom même un champignon qu'il nous assure avoir été ainsi dénommé par Gaudichaud. C'est le Tylostoma Léveilleanum! Le spécimen original de Gaudichaud peut encore se voir au Muséum de Paris. Gaudichaud, qui n'eut pu distinguer entre un Tylostoma et un Geaster se borna à étiqueter ce champignon "Fungus Isles Sandwich." J'ai vu l'étiquette de la main même de Gaudichaud rien qui ressemble a "Tylostoma" ou a "Léveilleanum"! Et l'on continue de décorer ce spécimen de ce nom frauduleux. Par respect pour la vérité, si nous tenons à donner le nom de l'auteur de cette espèce, ajoutons Léveillé et non Gaudichaud qui s'était borné à indiquer simplement la provenance du champignon "Fungus Isles Sandwich."

From a financial point of view mycology is not a success. I was told that one of the most voluminous writers on the subject died recently, a charge on public charity, and the story of the poverty and sufferings of poor old Persoon, the greatest genius who ever worked with mycology, has already been related in our writings. If I had spent as much time and money on something useful, for instance, mining and engineering, electrical engineering, or chemistry, as I have on the old puzzles of mycological writers, I might have been drawing a good salary by this time. If, therefore, mycological writers should abandon the custom of printing their names on every conceivable excuse as a little prop to their own vanity, there would not be much "reward" left for their labor.

The result of these conditions is, that since Fries' day the real study of mycology has practically ceased. The study of the relationships, distribution, and character of species, has degenerated into a scramble for "new species" or a juggling of the names of old species. Workers get a little elementary knowledge of genera and then proceed to grind out as "new species" everything they do not know as an old species, of which they usually do not know very many.

Numerous cases can be cited where new species have been discovered, not only based on old species, but the author was absolutely innocent of knowledge as to which genus they belonged. I never could understand how a man who does not know the old genera, can be competent to recognize a new species. Of course, I do not charge bad faith in the matter, for I think that many of them, particularly such men as Peck and Schweinitz, have been perfectly honest in their promulgation of new species, and being among the first in the field, they have gotten many that are valid. Nor do I include in the list such men as Bourdot, Burt, or Bresadola, men who thoroughly qualify themselves as to their subjects, before entering the new species field. Nor yet those who have made thorough investigation in special subjects, as Boudier and Phillips on Discomycetes, Lister and Macbride on Myxomycetes, etc. Nor, of course, do I include the men who have given so much to the investigation and information regarding the structural character of the fungi, such as DeBary and Tulasne, but these men were not mixed up in the taxonomic scandal.

I believe that the first thorough work of the larger fungi in the United States, combining both scholarly investigation and care, was Durand's publication of the Geoglossaceae (1908). According to my view Durand detracted from the permanent value by adopting a number of unnecessary genera, the only effect of which was to add "Durand" to the "new combination." Overholts' recent publications on the Polyporaceae are entitled to mention as having much merit, and in his most recent work he has entirely rejected the nomenclature sophistry that destroyed the value of his earlier work.

If all writers on mycology were as thorough, as careful, as accurate, as conscientious, as painstaking, and as earnest as Professor Burt, this pamphlet would never have been written. His work on the Thelephoraceae is the result of years of close study and is as near perfection as any one will ever attain. If he has a fault it is in being too conservative, and no one can ever charge him with adopting any innovation for the purpose of adding his name to a plant name. That he follows the custom is because he thinks it is right, and if it always led to as excellent work as he has done, even if we did not think it good taste, we should feel tolerant toward it. But it is unfortunate that Prof. Burt did not rise above the petty vanity of writing his name after a number of plant names. Burt is the one man that should not have indulged in this little conceit.

There is about the same contrast between Burt's and Massee's work on the same subject, as there is between a letter to a business man from some expert stenographer and one from his four-year-old boy. And on the same principle that the latter will afford the business man the more pleasure, so Massee got as much advertisement and material reward from his work as Burt will get from his, under the present system of advertisement and camouflage employed in mycology. Such a system is not fair to those who are really doing good work, and it is a direct bid for superficial and careless writings.

In my personal contact with mycological writers in the sections in which I have worked, there have been three men of prominence who have impressed me as being earnest and consistent students of "old species," viz.: Burt, Bresadola, and Romell. The others impress me as being mostly interested in posing as authors of "new species" and not caring much whether there is any truth or even probability in the "new" part of their proposals. And even these three men do things occasionally that look irregular to me. I have always been a consistent admirer of Bresadola, but my idol got an awful jolt when I noticed that he had proposed a "new species" of Mycena from dried material from Japan. I do not believe that he or any one else can determine the "old" species of Mycena from dried material and get one out of ten right, not to mention "new species."

Recently I noted where some "new species" of Odontia were named. I do not believe that there is a man on earth who has ever intelligently studied the old, named specimens of resupinate, foreign Hydnaceae; until some one does it, the proposed new species are only guesses.

In dem Berliner Museum befindet sich ein fusshofer Stoss von Herbariumheften mit "Neuen Arten" von Marasmius tropischen Ursprungs, die von Hennings veröffentlicht wurden. Ich bin überzeugt, dass Hennings kaum mit einem halben Dutzend der mehr als hundert betragenden "alten Arten" von Marasmius bekannt war, die vorher von Berkeley und Anderen vorgeschlagen waren, und dass er überhaupt gar nicht damit bekannt sein konnte.

Nach Hennings' Tode unterwarf von Höhnel die Exemplare in dem Berliner Museum einer Durchsicht, und veröffentlichte "Verbesserungen" oder Meinungsverschiedenheiten im Vergleich mit Hennings betreffs der Gültigkeit von Arten und Klassen. Viele von uns sind der Ansicht, dass Hennings wohl ebenso gut für diese Arbeit berufen war wie von Höhnel. Der verstorbene Dr. Magnus pflegte zu sagen, dass Hennings zweimal starb: Zuerst eines natürlichen Todes, dann eines gewaltsamen durch von Höhnel.

There seems to be something about work with fungi that makes the best of men moral cowards. It is so much easier for a man to pose as the author of "new species" than to state to his correspondent that the specimen belongs to a section that he does not know. It takes a lot of moral courage for a man with a reputation as a mycologist to say that to a correspondent. Very few men have that courage, and the one particular thing that first impressed me with the extent of Bresadola's knowledge was the fact that he reported many specimens I sent him as "a moi inconnu." It was a novelty in my experience. When it comes to naming specimens

for correspondents, no information is many times better than wrong information. Mistakes in mycology grow and spread, and like gossip the more often they are repeated the worse they get. Sometimes they bring on a whole train of disastrous results. For instance, Cooke did not know the difference between a Bovista capillitium and a Mycenastrum capillitium, and advised Ellis that his Bovista (or rather Bovistella, which is same thing as to capillitium) was a Mycenastrum. De Toni, who compiled the Gasteromycetes for Saccardo, and did not apparently have the most elementary knowledge of the first principles of puff-ball classification, got an idea that Mycenastrum was the same as Scleroderma, with the result that Ellis' Bovistella, which he called Mycenastrum on Cooke's advice, appears in De Toni's compilation as Scleroderma. Of the features on which puff-balls differ and are classed, viz.: cortex, peridium, gleba, capillitium, spores (and when known, basidia), there is not one single character that Bovistella and Scleroderma have in common.

Pendant mes séjours à l'étranger, j'eus parfois l'heur de me rencontrer avec des Américains qui suivant l'expression anglaise faisaient le "tour du cercle." Dans l'idée d'acquérir un nom dans la mycologie, ces compatriots se croyaient sans doute obligés d'obtenir quelque expérience à l'étranger; dans ce but ils faisaient une course à travers les musées de Kew, Paris, Leyde, Berlin, Upsala. En général, leurs "études" consistaient en quelques heures passées dans chacun de ces musées; ils prenaient à peine le temps de déranger la poussière des couvercles de bôites à collection. Tout bonnement, un bluff! disait-on en Europe où ce mot anglais est désormais adopté.

Atkinson m'intéressa tout particulièrement. Il revenait de Suéde où il avait bien passé trois semaines à faire des collections; c'était lors de son premier voyage. Je le rencontrai à Paris; il ne faisait qu'y passer mais il comptait bien y revenir et rester en France une couple de mois pour y continuer ses collections. Alors, me dit-il, il se mettrait à réorganiser la situation mycologique en Europe. Depuis lors cette situation est restée à peu prês la même. Atkinson a dû reconnaître la force du vieux proverbe: "Qui trop embrasse mal étreint." De retour en Amérique il ne manquait jamais l'occasion de faire allusion à ses rencontres avec les autorités scientifique d'Europe. Quoi? Le Pirée? Il est mon ami! C'est une vielle connaissance!

Lors de son premier passage à Paris, il eut, nous dit-il, une entrevue avec Boudier. Ce dut être une pantomime car Boudier ne sait pas un traître mot d'anglais et à cette date Atkinson ne savait pas même assez de francais pour retrouver son hôtel. Ailleurs il informe ses lecteurs qu'en compagnie de M. Geo. Massee il a cueilli le Polyporus applanatus. Si c'est en compagnie de Massee qu'il l'a cueilli et si c'est bien M. Geo. Massee qui le lui a identifié, il a très probablement un tout autre spécimen. Dans tous les livres par lui publiés, M. Geo. Massee confond le Polyporus applanatus avec le Fomes fomentarius, invariablement il donne à ce dernier les spores et les caractères appartenant au premier. Si, le jour où il fit cette fameuse excursion avec Atkinson, Massee connaissait les caractères distinctifs des d'eux espèces, il les avait oubliés quand il publia ses livres et l'un deux au moins a été publié depuis le voyage memorable d'Atkinson.

While I have written a good many "tirades" on this subject, I would not have any of my readers believe that it is from any personal grievance. On the contrary, the mistakes, blunders, and personal foibles of mycological writers have been my chief source of pleasure. I have never failed to express myself plainly, and have spared neither personal friend nor antagonist. I do not know that I have made any enemies except Atkinson, and was surprised lately to find that he had taken offense at some of my writings. I have always tried to be good natured in my comments, and as a general thing, I think the parties affected are taking it more as a joke on themselves and an idiosyncrasy of myself, (with the exception of Atkinson).

Nor am I deceiving myself into the belief that I will accomplish what I am apparently trying to bring about, the abolition of personal advertisements in mycology. I know I will not, but on the contrary will make those who follow it more determined in the matter. There never was a bigger piece of small conceit than the man who writes "new species" after a fungus name. He virtually says: "Behold what a great man I am. There are more than 72,000 fungi named. Count them, 72,000, and I know them all. For if I did not know them all how could I know that this is a 'new species'?"

In about four cases out of five when men have written "new species" after fungus names they would have been nearer the truth if they had written "new to

me." That is in the small part of the subject that I have investigated, and probably in it all. I have had too much experience not to know that if one really wants to accomplish an object, he should not go directly at it. One half a page of flattery, to men who are so fond of seeing their names in print that they want them written every time a fungus is mentioned, would have more effect than these sixteen pages of "knocking" them.

Every one who gets many fungi to name will receive an embarrassing number that he cannot name, no matter how well he has worked over the section to which the specimen belongs. The most he ought to say is that it is unknown to him, and if he proposes a name for it he should admit that he names it because he has need for a name for it, and does not know whether or not it has a name. It is simply an assertion, and is untrue as often as it is true if he calls it a "new species." I do not believe that half the names proposed by any one (and I do not except the writer either) are as matters of truth, really proposed for plants that have never been named.

Prof. Kauffman, whom I met in Sweden, told me that my writings impressed him that I wished to be the "whole show." I took no exception to it, for I have no doubt but that is the impression my writings made on him. I do not wish to be the "whole show," for there is room for everybody. All I wish is that those working on the subject would make a "better show," a "more correct show" and a "show" with more truth in it, than has been shown in the past.

Prof. Kauffman also told me, in speaking of advertising, that I was the biggest advertiser of them all, and that my Mycological Notes were nothing else but an advertisement. I did not take any exception to that either, for it is true, but as I told Prof. Kauffman, my advertising is paid for and is legitimate. What I object to in the advertising system in mycology is that it is a kind of "dead-head" advertisement. Some fellow comes along and names, or mis-names a lot of specimens and expects everybody who uses the names afterwards or refers to the plants to give him a lot of free advertisement.

My attention to the real conditions in mycology was brought about by an accident. Some years ago I sent the same specimens to three different authorities. All reported on it, but each named it a different species. I knew but very little of the subject, but I could not understand how the same plant could be three different species at one and the same time, and I started out with the intention at least of trying to reach the truth of it. In this I have only partially succeeded, but I have gotten a good deal of amusement and pleasure out of it. Learning the facts of mycology is very much like a detective story. There is so much that is not true, and so little that is true, in our published accounts, and so vague and indefinite that hunting for facts is like looking for a needle in a haystack. We get a clue here, and a suggestion there, but the ultimate truth will never be known, at least during this generation. It is impossible to separate the little that is of value from the much that is not. Most assuredly I do not expect in the short time I shall have to hammer on this subject to bring about a revolution and abolish the evils. I have stated before, that no one can stop bullfighting by appealing to the matadors, but yet I do hope to sow seed that will grow, and in time bring about the much to be desired result. When the time comes that a binomial represents a definite plant, and is not encumbered with some individual name to show a view (or usually misview) some man had of it, then there will be rapid advancement in the "science" of mycology.

Quand je me mis à adopter pour les champignons la nomenclature binomiale, a l'excursion du nom de l'auteur (du créateur, dirait Quélet) certains en conclurent que c'était de ma part ignorance de la coutume sur ce point. Mon ami. le Professor Patouillard, appela un jour mon attention sur ce point. Mon livre etait sous ses yeux, ouvert à l'endroit ou je décris le "Tylostoma." "Apres ce nom générique," me dit-il, "vous eussiez dû indiquer "Tournefort" ou tout autre nom suivant le sujet. Cela nous permettrait de consulter ces auteurs et de voir ce qu'ils en ont dit." "Professor Patouillard," lui réspondis-je, "si vous ne connaissez pas suffisamment le genre Tylostoma, il vous faudra l'etudier un peu." Il sentit ma pointe, je crois, car depuis lors il n'a pas insisté.

About the time I began the work, Prof. Underwood, who impressed me at that time as wishing to direct and dictate all matters of American botany and mycology, wrote me about to this effect:

My dear Mr. Lloyd.—I really must protest at the needless trouble you put us to in omitting the authors' names. When your last paper was received, it was necessary for me to make a special visit to the New York Botanical Gardens in order to look up the names to find what species you propose as new, before I could write a review of the paper.

I replied, if not in these words, at least to this effect:

I cannot see why the new species are of any more importance than the old species. If you do not know the names of puff balls well enough to recognize them when you see the names in print, I hardly feel that you are competent to review a paper on puff balls.

I never had any further "protests" from him on the subject.

This is an age of "Law." Men (mostly self-appointed if the truth were known) meet in solemn conclave and promulgate "rules" for others to work by. No one ever pays any attention to their rules—never did, and never will, but they get a little glory in posing as "law makers." They have about as much authority and power as a stage policeman. One crowd gets together and makes "laws" to hide a lot of cheap name-juggling, and then another crowd gets together to oppose this particular brand of name-juggling and to "legalize" another method.

More crimes are committed in nomenclature under the name of "law," than have been committed in Belgium under the excuse of military necessity. I have no more sympathy for a mycological writer who hides his juggling under the cloak of some "rules" than I have for the kaiser, who justifies his war of conquest under the plea that the Germans are the people chosen by the Almighty to govern the world. And this does not apply to one set of "law makers" more than to the other. Both of them were made with the view to "legalize" their own name-juggling, and "outlaw" the name-juggling of others. If a man wants to indulge in the pastime of juggling plant names, let him do it on his own responsibility and take the consequences.

Les vrais travailleurs en mycologie devraient prendre leur travail au sérieux et ne pas se borner à jouer avec des mots. Quand des noms sont parfaitement établis et généralement adoptes v. g. Geaster hygrometricus, Polyporus sulphureus, Xylaria polymorpha, Ustulina vulgaris, Cordyceps capitata et nombre d'autres, c'est tout bonnement un tour de passe-passe que de vouloir les changer, sous prétexte qu'on a rencontré dans quelque vieux bouquin un synonyme, oublié depuis un siècle, probablement faux à son début et sans valeur aujourd'hui même si alors il était juste. Parfois le mycologue qui se permet cette bouffonnerie, ajoute modestement son nom propre à la "nouvelle combinaison" le truc alors est percé à jour; inutile déssayer de se couvrir de lois adoptées en session solonnelle. Un tel individu a manqué sa vocation; il derait gagner sa vie à ramasser des "megots" sur les Boulevards. Ce métier est tout aussi honorable que le métier de jongleur de dates et de noms. Si vous trouvez sur votre chemin un auteur qui pour justifier ses prétentions vous donne toute une liste de synonymes avec table chronologique, ne vous arrêtez pas; c'est un charlatan il fait du camouflage.

When I began my policy of showing up these mistakes and blunders, it was a new departure in mycological writings. There had been a kind of tacit understanding, a sort of free masonry among the writers on the subject, to the effect that when they found mistakes, they passed them by without mention or at least with mere incidental reference. It is a new feature to show, as I have often done, that many of these writers, who were posing as having a profound knowledge of mycological subjects, are making mistakes that were absolutely discreditable and would not be tolerated in any subject on which the public is generally informed.

Since we have opened the subject, it has been taken up by others, as evidenced by the recent account of Prof. Petch on the Ceylonese situation. If we had criticised Berkeley as Petch has criticised him, it might have been charged as national prejudice. While we have some very intimate friends among the English mycologists, as a general thing there is not much love lost between the English and the Americans on the subject of mycology. This we think is largely due to Berkeley, for American mycology had gotten into a hopeless tangle through the hundreds of alleged "new species" that Berkeley claimed to have discovered in this country, which he named, but did not describe in such a way that anyone could recognize one of them, and which necessitates a trip to Kew to see what Berkeley has named before anyone can work on the subject. And when one makes the trip he finds that many are based on little frustules that tell nothing and should never have been named at

all, and that the greater part of his "new species" have not much value. But Petch is an Englishman and so was Berkeley, and it could not be charged that there was any national prejudice in Petch's account. Petch's exposé agrees exactly with conditions as I found them, and we think Prof. Petch is entitled to a great deal of credit for showing them up without mincing words.

We cannot reproduce Petch's article in full, for it occupies a space of more than 45 pages, principally devoted to showing up the mistakes made by Berkeley in the naming of Ceylonese fungi. The following are a few blunders Berkeley made according to Prof. Petch.

He discovered the same species of Lentinus as a "new species" on eight different occasions, and gave it eight different names. He discovered another species of "Lentinus" as four different species, and then did not get it right, for it is not a Lentinus.

The first fungus specimens were collected in Ceylon by König. Berkeley found and named in the British Museum fourteen species in 1842. Afterwards he worked over and named about sixteen hundred collections of fungi from Ceylon, and never found a single one of the fourteen species that he had previously named.

Prof. Petch was satisfied to work over the names given the fungi in Ceylon, but the same fungi that grow in Ceylon grow for the most part throughout the tropical world. Had he carried his investigations into plants described as "new species" from other countries, it would probably have taken about ten times the space to record the mistakes that he found. As a matter of fact, the so-called "new species" for the most part are simply collections. To describe and name them as new species was the easiest thing to do. Besides the glory that it brings, it has the advantage of letting some other fellow do the work of finding if it be true. If it turn out to be true, then the author's name is added to the plant name, to go thundering down the ages. If it is not true, and most of them are not, no particular harm is done, for it is quietly put aside in small type in "synonymy" and mycological etiquette prescribes that nothing further be said about the mistake, no matter how big a bull may have been made. One American writer said, if he was correctly quoted, and I have no doubt he was, that he "would name as a new species everything he did not know, and if others did not like it let them find out the difference." They are beginning to find out.

Berkeley was by no means alone in this work. It is continued down to the present day, but very few of Berkeley's mistakes will appear in the forthcoming papers on the "Myths of Mycology." However careless Berkeley was in making "new species," he had a thorough general knowledge of classification of fungi, and he made but few of what are known as "bulls." Everybody makes mistakes; in fact, mycology has gotten into such a condition through multiplication of species by the "new species" promulgators that the complete truth will never be known. Berkeley's work was a classic compared to the work done by such men as Léveillé, Cooke, Massee, Kalchbrenner, Hennings, Atkinson, Copeland, and others.

Let us, with these few introductory remarks, review the specific account of some of the Myths of Mycology. To illustrate we will quote from the latest book we have seen, namely, "A Text Book of Mycology and Plant Pathology," by John E. Harshberger, which was issued during the present year.

We do not cite these myths found in Harshberger's book as anything derogatory to the author. It is simply derogatory to the condition of the subject when such statements pass current in its literature. Prof. Harshberger was well informed on current literature, none of the myths in his book originating with him. As a matter of fact, the book is mostly devoted to pathology and in the main we believe is one of the most complete and most correct works on the subject. It is principally in the short portion of the work devoted to classification that Prof. Harshberger has made his erroneous statements, and it is evidenced in all cases that he got his statements from other sources, principally, we judge, the German authors. While the Germans have been the leaders in physiology and pathology of fungi through the work of such men as De Bary, Brefeld, and Hartig, they are woefully at fault in the section of taxonomy, and the last work issued by the Germans, namely, Engler and Prantl's Pflanzenfamilien, was chiefly, in the section devoted to the larger fungi, a compilation by Dr. Hennings, and inaccurate in many respects. This apparently is the source of most of Prof. Harshberger's misstatements. We will cite a few of them as follows:

"The Hymenogastraceae.—The subterranean fruit bodies of these fungi suggest those of the families Terfeziaceae and Tuberaceae among the Ascomycetales. The fruit bodies are variously shaped. In Lycogalopsis, they are hemispheric; in Phallogaster, pear shaped; in Cauloglossum, club shaped; some are stalked and suggest the shape of the Agaricaceae."—Harshberger.

Unfortunately for Prof. Harshberger's illustrations, neither one of the genera that he uses as illustrations is a Hymenogaster and neither of them is subterranean.

The professor evidently does not know that the man who has tried to change the established classification of Hymenogasters did not consider all of them as subterranean.

"Sphaerobolaceae.—The family includes a single genus, Sphaerobolus, of five species. The best known species is Sphaerobolus carpobolus of cosmopolitan distribution. The fruit body is on the surface of the ground."—Harshberger.

The professor might have added that Sphaerobolus carpobolus is the only species really known and that it usually occurs on pine wood or manure and that when (exceptionally) it is found growing on the ground, it is known by a different specific name, but is the same plant.

"Meruloideae.—This subfamily includes two genera of interesting fungi: Merulius and Mycodendron. The Mycodendron is a curious fungus with a fruit body which suggests a muffin stand, or a pagoda with superimposed, rounded spore-bearing shelves, through which the central stalk runs from one half to the next above. Mycodendron paradoxum has been collected on wood in Madagascar."—Harshberger.

The genus Mycodendron is, in my opinion, a pure invention not based on anything that exists, not authenticated by any "type," and, in my opinion, it only existed in the imagination of the author. It is so improbable that a fungus would grow in this manner that I have always believed that it was one of the most obvious "Myths of Mycology," having no more basis of fact than the Unicorn, the stone figure of which lies over one of the gates of Kew Gardens. In fact, I have been almost inclined to believe that the wonderful genus Mycodendron might have been inspired and copied from the Chinese Pagoda that was erected in Kew Garden, and that it has no other basis on which to rest.

"Hypochnaceae.—Hypochnus occurs on old stumps, on leaves, and on mosses. Tomentella is another genus."—Harshberger.

As a usual thing Hypochnus and Tomentella are different names for the same genus used by different authors. Hypochnus in the sense of Burt is Tomentella in the sense of Bourdot.

"Fistulinoideae.—The most important genus of this subfamily is Fistulina, which comprises about six species."—Harshberger.

The genus Fistulina in reality consists of but one species that is at all common, which is Fistulina hepatica. The other species, Fistulina pallida, is quite rare, and has even been suggested as a form of Fistulina hepatica, although I think it is distinct. The other four species are purely imaginary.

"The family Clathraceae includes eleven genera of highly specialized morphology.

"Lysurus Mokusin, China.

"Anthurus borealis, North America.

"Calathiscus sepia, East Indies," etc.—Harshberger.

"Anthurus borealis" does not belong to the genus Anthurus and never did. It was based entirely on a misconception of the genus. The plant is a Lysurus and probably the same as Lysurus Gardneri of Ceylon.

Calathiscus sepia, as far as any evidence exists, or probability, is purely a fantastic invention with no basis of fact whatever.

But it is in the advertising department of the book Prof. Harshberger makes his most amusing mistakes. There is really no occasion for his going into the advertising, for he had nothing to gain by it, and, not being engaged in the naming of plants, none of them bear his own advertisement. I can readily understand how an author who has an ambition to see his own name written after the names of plants will write the names of others as an excuse, but unless he has such aspiration, no possible advantage can come from it to him in any way. If Prof. Harshberger had been as wise as Professor Dr. Jakob Eriksson of Stockholm, who recently wrote an excellent book on plant diseases and used binomials alone in designating the plants, he would have avoided all criticism such as this. We will cite a few of the advertisements found in Harshberger's book.

"Stereum subpileatum, W. H. Long."

Stereum subpileatum was named in 1843, so assuming that Long was really the author of the name, and was of age when he named it, he must now be over 100 years old. As a matter of fact, Long did not know the name of this fungus until he was told, and since I know this, to see him cited as the author of the name is rather amusing to me.

"Polyporus pinicola, Atkinson." This plant was named pinicola in 1810, therefore, at least calculation, if Atkinson named it, he must be over 130 years old at this date. As illustrations of the value of Prof. Harshberger's advertisements, in another place he cites the same plant as "Fomes pinicola, Fries," and Fries never in his life used the name of Fomes pinicola. Then, in another place he refers to the same plant as "Polyporus ponderosus, von Schrenk," although, of course, he did not know that Polyporus ponderosus is the same thing. If Prof. Harshberger belonged to the most advanced school of name-jugglers, which much to his credit he does not, he might have called the same plant Fomes marginatus.

"Fomes fulvus, Fries." The plant that Fries called Polyporus fulvus is entirely different from the plant that von Schrenk called Fomes fulvus and cited as the cause of a disease of the birch. It is a matter of truth that six different plants have been called Fomes fulvus or Polyporus fulvus by as many different authors, and not one of them knew to what the others referred under this name.

"Merulius lacrymans (Jacq.), Fries" and in another place it is given as "Merulius lacrymans, Schum." Surely they both cannot be right if the references are to the same plant.

These illustrations might be continued further, but we think enough has been given to convince Prof. Harshberger that the introduction of these advertising features into a work chiefly on physiology and pathology is not only unnecessary and useless, but may largely contribute to the "myths" of his book.

The Genera of Fungi, by Frederic E. Clements. This work, which appeared in 1909, was supposed to be the latest word in the classification of fungi. As stated in the preface, it was largely a translation of the keys in Saccardo, and illustrates in a graphic way what little is known on the subject when a man prints a whole page of keys and can hardly get a sentence in the whole that is correct. As Professor Clements puts his book forth in the main as a translation from Saccardo, we cannot, of course, hold him primarily for these mistakes, but there is one feature of his work for which he must accept full responsibility.

He sets himself up as a censor of the pidgin Latin of mycological names. No doubt these names need a censor bad enough, but after they become established it is futile to try to change them, and the Professor will have his troubles for his pains. Nobody believes in the purity of the current pidgin Latin of mycological writers, and I for my part do not place much stress on its utility, but it is "a part of the game" and there is no way getting around it. As the Professor puts so much stress on the purity of pidgin Latin, it seems to us he should explain at more length where he departs from conventional usage. Thus where he uses Arachnium for Arachnion, Mitromyces for Mitremyces, he should explain whether his names are corrections of erroneous pidgin Latin names, or whether he has made a mistake himself. The absence of light on these cases leaves it all uncertain.

They tell a story in the museum at Paris of a certain writer on botany who used to fix up his "Latin" names by putting a lot of separate syllables in a hat and drawing them out and piecing them together. They assert that it was an actual fact, and that his names are now in use in current botany. I knew all the details at one time, the name of the writer, etc., but they have slipped from my mind. If Professor Clements ever undertakes to censor the pidgin Latin of this man it would probably drive him into an early grave.

We shall now proceed to consider a few of the statements made in Clements' keys.

"Gyrophragmium.—Gleba lamellate. Capillitium none.

"Polyplocium.—Gleba not lamellate. Capillitium present."

Polyplocium and Gyrophragmium are exactly the same thing, and how they can be distinguished in this way I am unable to comprehend. Both are lamellate and neither has capillitium.

"Elasmomyces.—Peridium with radiate lamellae.

"Secotium.—Peridium without lamellae."

The only difference between Elasmomyces and Secotium is that the author of Elasmomyces knew that it had cystidia, and nobody knows whether Secotium has cystidia or not, and if it has not, that would not, for me, make Elasmomyces a different genus. I have no doubt that Elasmomyces is exactly the same genus as Secotium.

"Cycloderma.—Columella cup shaped.

"Geasteropsis.—Columella obturbinate."

Neither Geasteropsis nor Cycloderma is a genus. Cycloderma is based on an unopened Geaster, and Geasteropsis is based on an anomalous Geaster with a deciduous endoperidium. There is the same difference between Geaster and Cycloderma that there is between a chicken and a chicken egg. To continue the illustration, Geasteropsis might be likened to Geaster, as a chicken to one that lost its feathers.

"Mesophelia.—Hypogaeous; spores subfusoid."

Well, it does have subfusoid spores, but I suspect that the statement that it is "hypogaeous" is not correct.

"Chaenoderma.—Peridium opening by valves.

"Cauloglossum.—Peridium laterally lacerate."

Chaenoderma was based on some little frustules of what in my opinion was a Secotium. Nobody knows how the peridium opens. Cauloglossum seems to have a deciduous peridium, but not much is known on that subject. In museum specimens the peridium, as far as I have seen, is always closely adnate, but they are said to rupture irregularly.

"Podaxon.—Peridium opening around the stipe."

I cannot say to the contrary, but it is not a good, generic key character of Podaxon.

"Sphaericeps.—Columella touching the apex of the peridium.

"Battarrea.—Peridium without columella."

As Sphaericeps and Battarrea are exactly the same genus, I cannot see how this distinction applies. Neither of them has a columella.

"Tylostoma.—Peridium fixed to stipe with distinct mouth."

I can only say under this head that it is a new way of fixing the peridium to a stipe, and I do not believe it is ever so "fixed."

"Tylostoma.—Peridium fixed to a stipe.

"Queletia.—Peridium easily separable from stipe."

I do not believe that the peridium is more easily separated from the stipe in one genus than the other.

"Battarrea.—Endoperidium convex; spores on upper surface."

"Battareopsis.—Endoperidium hemispheric; spores within."

There is no difference in the shape of the endoperidium nor the manner of bearing the spores in these genera. A photograph of one could not be told from a photograph of the other. In fact, Battareopsis is not a genus, but an anomaly of Battarrea, which does not have the peculiar sterile cells found in the gleba of Battarrea.

"Husseya.—Endoperidium with plicate-sulcate mouth; capillitium copious.

"Mitremyces.—Endoperidium suspended free in cavity of exoperidium."

As these two genera are exactly the same genus, there is no possibility of distinguishing them by these points. In addition, neither "genus" has capillitium, and the spore sack in the cavity is not the endoperidium.

"Diploderma.—Spores borne on the inside."

Well, we cannot say to the contrary, as the spores are borne on the "inside" in every genus of the family. It is, however, not a very good "key" character.

"Geaster.—Endoperidium dehiscent.

"Stella.—Endoperidium indehiscent."

If the genus Stella had any value (which it has not, as it is simply a Scleroderma), its value would lie in the fact that its peridium is dehiscent.

"Diplocystis.—Exoperidium cup shaped."

An incidental feature in a genus as strongly characterized as Diplocystis.

"Trichaster.—Spores borne on the outside of the endoperidium."

If Professor Clements were writing an article on Zoology, and should describe some mammal with its intestines on the outside of its body, his claim would be as credible and as creditable as to characterize a Gasteromycete with spores on the outside of the peridium.

"Broomeia.—Mycelium crust like.

"Coelomyces.—Mycelium not crust like."

It is stretching a point to say the least to designate the stroma of Broomeia as a "crust like mycelium." As to Coelomyces, it has not much value as a "genus" as it is based on an unopened Geaster.

"Lycoperdon.—Peridium with a distinct stalk-like base."

Most Lycoperdons have sterile bases; some do not, and with those that do it is very rarely "stalk like." Most species are sessile.

"Lanopila.—Capillitium a dense elastic mass.

"Bovista.—Capillitium not dense elastic."

We doubt if the Professor can distinguish the capillitium of Lanopila from the capillitium of Bovista by any physical properties, and without resorting to the microscope.

"Catastoma.—Mouth at base when in the ground."

That is true as to some species of Catastoma, but it is not true as to others that are so classed.

"Lycoperdopsis.—Peridium entirely falling away."

While that is true of Lycoperdopsis, it is also true of a number of other genera, and the genus is not based upon the character, but on the nature of the capillitium.

"Calvatia.—Peridium stipitate; exoperidium dehiscing above along undulating folds."

There are no species that are truly stipitate, and as to the exoperidium dehiscing above along undulating folds, if there are any folds I never saw them, nor is it the exoperidium that dehisces, but the endoperidium.

"Gymnoglossum.—Peridium none."

The single collection (all known) that represents this genus at Kew has no peridium, but that it never had is rather an unwarranted statement.

"Corditubera.—Gleba reticulate-veined, hard."

The only specimen of Corditubera known impressed me as being a Scleroderma. I am familiar with the picture that was gotten up to represent the basidia, and I am aware that they are not those of a Scleroderma, but I did not find basidia and I doubt if they ever existed as shown.

"Hippoperdon.—Spores globose."

As the genus Hippoperdon is a cul-de-jatte based on a Calvatia that has lost its fertile portion, it is hardly worth while getting up key characters so that the "genus" can be recognized.

"Hippoperdon.—Gleba somewhat floccose. Spores globose.

"Castoreum.—Gleba somewhat floccose. Spores fusiform."

The genus Hippoperdon, as stated before, was based on the (remnants) sterile bases of Calvatia and is not a genus. The genus Castoreum does have fusiform spores, but its gleba is not floccose, and it has no relation at all to Hippoperdon.

"Scleroderma.—Peridium present enclosing the gleba."

As the peridium is (or was) present and encloses the gleba in every genus of this family, it is not a very good generic key character.

"Caloderma.—It is a synonym for Scleroderma."

As an evidence of how lightly editorial responsibility rests on mycological compilers, the Professor proposes the above synonym. Caloderma was named a few years ago and came from the same country (Borneo) as the wild man. No specimens are in any of the usual museums, and it is safe to say the Professor never saw a specimen in his life, and probably never took the trouble to look up its picture. I do not know anything more about it excepting that I have looked up the picture. I would not take the responsibility of referring it as a synonym for Scleroderma, excepting as a vague guess, and at the best it does not appear to be a bad guess.

"Clavogaster.—Peridium dehiscent."

This genus is based on a single half specimen at Berlin, and no one knows whether it dehisces or not. It is very close, if not the same as Secotium.

"Favillea.—Peridium clavate."

This is an old genus proposed by Fries on some Australian material that has disappeared. All we can say is no such genus is now known in Australia. The only specimen labeled Favillea in Fries' collection is the ordinary Polysaccum, as was probably the original Favillea.

"Phellorina.—Peridium not entirely disappearing. Stipe hollow.

"Xylopodium.—Peridium not entirely disappearing. Stipe not hollow. Peridum many lobed."

As these two genera are exactly the same, the points of distinction are not well

taken. The word "entirely" is good, however, for the peridium never disappears at all. Some specimens have the stipe hollow and some not, the same as some men are hairy and some bald, but it is not a good, generic character.

"Areolaria.—Peridium reticulately dehiscent."

The genus Areolaria, as found in Saccardo, is made up of three different genera, namely: Phellorina, Calvatia, and Scleroderma. The Professor naturally had trouble in finding a good key character for such a "genus," and the one he selects, "peridium reticulately dehiscent," was a very appropriate selection, as it does not apply to either of them.

"Dictyocephalus.—Peridium stipitate; stipe with a volva.

"Testicularia.—Peridium not volvate; sessile or with stipe-like base."

There is about as much reason in contrasting these two genera as there would be in contrasting a hazel nut and a crooked-neck squash. They have no affinity nor relationship nor resemblance. Dictyocephalus should be contrasted with Tylostoma or plants to which it is related. Testicularia belongs to the Ustilaginaceae family and has no botanical relationship to any Lycoperdaceae.

"Polysaccum.—Peridium with stipe-like base, mucose-cellular within."

Some peridiums do not have any stipe-like bases and none of them are mucose-cellular within.

"Polygaster.—Peridium sessile; fleshy cellular within."

This genus was based on an old crude figure made 167 years ago from Amboy. No one since has ever seen a specimen or even pretended to have seen one. It is naturally difficult for the Professor to get up a good key character so his students could recognize this "genus" under these conditions, and it is extremely improbable that they will ever meet it.

"Arachnion.—Peridium corky; sporangioles round.

"Scoleciocarpus.—Peridium membranous; sporangioles cylindric."

These two genera are exactly the same, and the author of the latter genus so announced, fully sixty years ago, shortly after he proposed it. When a fable of this kind gets started in mycology, it takes from sixty to one hundred years for the compilers to catch up with it. It is rather misleading to describe the peridium of Arachnion as "corky" when it is one of the most delicate and fragile membranes found in the puff ball world.

"Paurocotylis.—Peridium hard, sporangioles large."

As this genus does not have sporangioles, in fact, does not belong to this family at all, but is an Ascomycete with its spores in asci, it is hardly worth while including it in the key of the Lycoperdaceae.

We have thus given a detailed analysis of the key of one of the families (Lycoperdaceae) of Professor Clements' book. We have not picked out exceptional cases where errors have been made, but have taken the genera one after the other as they come in the book. We do not do this to draw any special attention to the errors of Professor Clements' book, for, as we have stated before, the book was only put forth as a compilation and is supposed to represent the current knowledge concerning fungi. It is merely an illustration of the inaccuracies and myths of modern mycological literature, when one gets up a key from the current and accepted literature, and does not in a single instance present the characters in his key on which the genus exists.

It is our belief that Professor Clements' students could not determine one single genus of this family from his key. In fact, we believe that fully eighty per cent of the statements that he has made in the key (of the Lycoperdaceae at least) are not only immaterial, but are actually untrue.

We trust the Professor will pardon us for devoting so much space to his key compilation, but we do it simply to show the condition of the literature, where such a compilation is possible.

If the Professor's keys represent the state of present mycological information, and they are supposed to be a compilation from the latest systematic work (Saccardo), the best we can say on the subject is that there is not as much truth in the keys, at least as to the family Lycoperdaceae, as there is to the Mother Goose rhymes which we knew as children.

Genus Dictybole.—There occurs quite frequently in the East, Ceylon, Java, Mauritius, etc., a phalloid known as Simblum gracile. It was quite well illustrated by Berkeley about seventy years ago. It varies somewhat as to form: the usual plant having a globose head and a smaller stipe. The plant called Simblum periphragmoides which has a head and stipe about of the same diameter, is really the same species as Simblum gracile, and several collections connecting the two are in the museum at Upsala. This Eastern species of Simblum is characterized by its yellow color—a color that is rare with the phalloids.

Some years ago, (1902), Long collected abundantly in Texas this rare Eastern plant, and I believe it is known to this day in our country only from his collection, one season. He photographed the plant (Exhibit A). At that time he was a student at Cornell, and he took some alcoholic material and left it with Atkinson. Atkinson conceived that he had discovered a wonderful "new genus" and drew a picture (Exhibit B) that he published in the Botanical Gazette, announcing his wonderful discovery of Dictybole. His illustration (Exhibit B) has more resemblance to a fisherman's net than to

Exhibit A

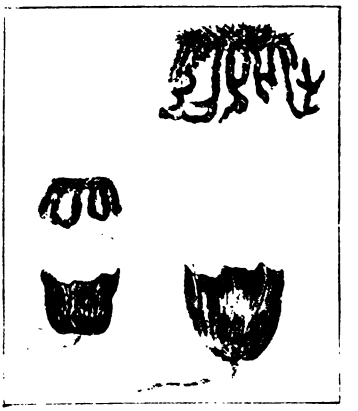

Exhibit B

any phalloid that ever grew. If Atkinson, instead of posing as an authority on the phalloid subject at that time, had been posing in the movies, he would have made a hit, for nothing as comical as his picture of Dictybole ever appeared in moving pictures. And it was put forth as "Science" and printed in a supposedly scientific journal. They ought to exclude such matter as that from the mails.

Stereum cyathiforme.—The genus Nidula is an excellent genus, first pointed out by Miss White in her paper on the Nidulariaceæ. It has the cups of a Crucibulum and the peridioles of a Nidularia. Berkeley, Peck and Hennings had each discovered alleged "new species" based on Nidulas, but neither one of them has paid enough attention to their "new species" to get them in the right genus. Currey was a local worker at London, who knew apparently very little about the subject; that did not deter him, however, from naming "new species" but fortunately he never did much of it. He got from India some empty cups of a Nidula that had shed its peridioles. He figured them very well in Transactions of the Linnaean Society, and if our photograph (Exhibit C) be compared, it will be noted that it is the identical specimen. Currey discovered that these empty cups of a Nidula were a "new species" of Stereum (sic). A Nidula and a Stereum have about as much resemblance or relation as a table cloth and a pot of mustard, and a

waiter in a cheap restaurant should know better. Still this work appeared in the leading "Scientific" Society of London.

Currey named it Stereum cyathiforme and Saccardo noticed that the name was preoccupied, and changed it to Stereum Curreyii. The original Stereum cyathiforme was an old vague tradition that no one knows anything about, and the second one was a bull, so that the name would not have been very much "occupied" if both had been left standing.

Exhibit C

Massee, when he wrote his "monograph" (sic) of the Thelephoraceae, also changed it to Stereum crucibuliforme. Massee knew enough of mycology to know the difference between a Nidula cup and a Stereum, if he had paid the slightest attention to it, but his "monograph" was only a superficial scratching of the surface of the subject, and the most obvious bulls went through without the slighest notice.

Genus Heterobasidium.—When Massee was writing his article on the Thelephoraceae he proposed a new genus "Heterobasidium" which he claims to depart from all known Thelephoraceous genera in having septate spores borne on basidia, and he clinches his argument by showing the spores as they are borne, (Exhibit D). When Burt was working with the same subject he investigated this "genus". He found it was based on some old sterile Stereum strands on which a little Peziza was growing. The spores that Massee found were not of the Stereum but of the Peziza, and were borne in asci, (Exhibit E). If Massee had simply in his scrapings gotten the wrong spores, it would have been only a mistake, but when he made the discovery of a wonderful "new genus", and draws from his imagination a picture to represent the basidia that he never saw and do not exist, then it becomes a proper subject for consideration in this pamphlet. I told Massee once that Professor Burt said that his new genus "Heterobasidium" was a bull, and some days afterwards he told me that he had no doubt that Burt was right. This was ten years ago, but he never mentioned it in print to the day of his death. As a matter of fact Massee was in touch with the mycological situation, and he did not care much whether there was any truth in his "new genus" or not, as long as he was getting his quota of advertising out of it.

Exhibit D

Exhibit E

I asked Professor Burt if he intended to show it up, and he said he did, but in a "nice way". The following was his "nice way":

"My own study of the type of Heterobasidium chlorascens, Massee, which is the type species of the genus, failed to locate any basidia whatever."

I readily concede that this is a nice way in dealing with this bull, but it impresses me also as being a very nice case of whitewash, and its treatment in this way only encourages others to "take a chance" on such work. One can not cure a cancer by applying a coat of soft soap.

Copeland.—American mycology has been enriched with some wonderful productions from the pen of Edwin Bingham Copeland. I do not know the man, but his contributions are a joke. In 1904 he published in Annales Mycologici some "New and Interesting California Fungi." He described and figured "Battarrea arenicola n. sp." and his figure is Gyrophragmium Delilei with no more resemblance to a Battarrea than it has to a wind mill. He described and figured "Podaxon strobilaceus n. sp." and his figure is Montagnites Candollei, with no more resemblance to a Podaxon than it has to a sausage stuffer. And then the interesting information he gives as to his species of the "Battarrea." He states "when the

genus Battarrea has been more carefully studied, this species will probably be separated. In the structure of the gleba it is strongly suggestive of Podaxon." Yes, the gleba of his "Battarrea" has about as much suggestion of the gleba of Podaxon as the sheets of this pamphlet do to a pile of granulated sugar.

When this paper came out I was in Berlin. One day Hennings came to me with the paper showing Copeland's illustrations of "Battarrea" and "Podaxon". I did not understand much that Hennings said, but I saw the joke and had a good laugh with him, which was a language we both understood. And these figures of "Battarrea" and "Podaxon" were published in "Annales Mycologici." The learned editors of "mycological" periodicals can do such things under the guise of "science" but if a country stock journal should publish a picture of a cow and claim that it was a sheep, he would not make a bit bigger bull, and would be the laughing stock of the live-stock trade. But "science" spreads its mantle of charity over a world of ignorance, and those who pose are not held responsible for it.

In 1905 Copeland announced the discovery of a "new species" of Lycoperdon. There had been 268 so-called species of Lycoperdon "discovered" before, and it is a safe proposition that Copeland did not know a dozen of them, and if he had known them he would have known that about 240 of them have no value. I know nothing about his new species, but on general probabilities there is not one chance in fifty that there was anything new about his species excepting the name. Eight years after his discovery, Graff listed the "species" the determination being made on the "judgment" of Doctor Copeland, the "type" having been lost. Mycological writers get so used to employing Latin in their work that they think in Latin, and handle the English very carelessly, as the employment of the word "judgment" in a case like this. A year later, Graff decided and published that Copeland's species is the same as Lycoperdon pusillum on the grounds that "The separation of the fertile gleba from the sterile base seems more or less constant." It would have been well for Mr. Graff before announcing this decision to have established that Lycoperdon pusillum has a sterile base The accepted view for a hundred years has been that Lycoperdon pusillum has no sterile base, hence his argument that Copeland's species is the same as Lycoperdon pusillum on the variation of the "sterile base" does not have much value on the face of it.

Cortinarius Berlesianus.—Peck, in his 23rd report, names a species of Cortinarius, C. tricolor. When compiled in the Sylloge, Saccardo found it was a duplicate and changed the name to Cortinarius Berlesianus in honor of A. N. Berlese.

Could anything be more incongruous than for one Italian to name an American plant, not supposed to grow in Italy, for another Italian, who had nothing whatever to do with it, when neither of them ever saw the plant, or would know it if they found it growing in their spaghetti patch. And yet such work as that is supposed to have some validity on the grounds of "priority," the "prior" part being that Saccardo was the first to "discover" that Peck's name was a duplicate. Highly "scientific" and "intellectual" work that is! Hunting up duplicates, and changing the name, and then have the nerve to add your name to the "new combination" as a reward for such discoveries. It is nothing but clerical work anyway, which an eight-dollar-a-week girl is just as competent to do. In fact, this was done by some "cub," as it is advertised as "Sacc. & Cub." I do not know who Saccardo's "cub" is, but no doubt he was a clerk. And these are the highly important details that mycologists preserve in their advertisements. We do not blame Saccardo for changing Peck's name when he found it was a duplicate. What we criticise is his writing "Sacc. & Cub" after it as if this was the slightest importance, and for not changing it to some name that was rational. Even the old gag of calling it "Cortinarius Peckii," in honor of Peck's mistake, would have been better.

LETTER No. 62.

Acknowledgment of specimens received since last report. My best thanks are extended to those who favored me with specimens. Some of the notes that will be illustrated with photographs will be published in future issues of Mycological Notes.

In my printed letter I do not give authorities for names, believing that the binomial should represent a plant name, but in acknowledging the specimens to my correspondents, I give the "authority" in event they desire to use the same. All specimens are acknowledged by personal letter as soon as they come into my hands. Foreign correspondents may send specimens to my English address and they will reach me promptly, although in countries which have direct parcel post arrangements with the United States, it is best to send them by parcel post direct to me. Specimens may be sent to either of the following addresses:

C. G. LLOYD,
224 West Court Street,
Cincinnati, Ohio.

C. G. LLOYD,
95 Cole Park Road,
Twickenham, England.

Cincinnati, Ohio, June, 1916.

AMES, FRANK H., New York:

Hypoxylon coccineum.—Tremellodendron pallidum.—Trametes malicola. —Physalacria inflata. (Cfr. Myc. Notes. Old Species, page 4, fig. 216-218.)—Peziza (Lachnea) hemispherica.—Poria subacida.—Polystictus cinnamomeus. —Polyporus gilvus.

BARTHOLOMEW, E., Kansas:

Polyporus cuticularis.—Poria pulchella.—Lenzites trabea.—Polystictus velutinus.

BENSON, BERRY, Georgia:

Laternea columnata, "fresh eggs."

BEWLEY, MISS A. K., Pennsylvania:

Favolus europaeus.—Polystictus conchatus.—Geaster saccatus.—Polyporus gilvus.—Schizophyllum commune.—Lenzites betulina.—Peziza floccosa. —Polystictus cinnabarinus.—Tremellodendron pallidum.—Thelephora intybacea.—Polystictus conchifer.

BIJL, VAN DER, P., South Africa:

Fomes rimosus.—Fomes McGregori.—Fomes Robinsoniae. (See Note 420.)—Lenzites betulina.—Polystictus zonatus.—Polystictus versicolor.—Polystictus ochraceus.—Fomes connatus.—Stereum lobatum. (See Note 421.)—Fomes Caryophylli.—Fomes robustus.—Daedalea Eatonii. (See Note 422.)—Polystictus biformis. (To be published in Mycological Notes.)—Trametes cingulatus.—Irpex vellereus. (To be published in Mycological Notes.)—Gramnothele mappa? (To be published in Mycological Notes.)

BOURDOT, REV. H., France:

Trametes sepium (sent as T. albida. See Note 423).—Lenzites trabea. (See Note 424.)—Polyporus radiatus. (See Note 425.)—Trametes subsinuosa. (See Note 423.)

BRENCKLE, J. F., North Dakota:

Trametes trabea.—Nummularia cinerea. (See Note 426.)

BRITTLEBANK, CHAS. C., Australia:

Mitremyces fuscus. (See Note 427.)

BURNHAM, S. H., New York:

Xylaria carpophila. (See Note 428.)—Hydnum scobiculatum.—Hydnum velutinum.—Polyporus Peckianus. (See Note 429.)—Stereum tuberculosum. —Xylaria digitata. (See Note 430.)—Sphaerographium Fraxini, as named by Mr. Burnham.—Hydnum croceum.—Polyporus elegans.—Polyporus malicolus.—Polyporus ursinus.—Peniophora Allescheri?—Polyporus tephroleucus.—Polyporus subradicatus.—Merulius aureus.—Trametes heteromorpha.

CLELAND, J. B., Australia:

Panus stipticus.—Lentinus ursinus.—Polystictus versicolor.—Radulum Neilgherrensis?—Scleroderma Cepa.—Paxillus aureus. (To be published in Mycological Notes.)—Tremella fuciformis.—Polyporus stereinus. —Polyporus dichrous.—Tremella mesenterica.—Hirneola auricula-Judae.—Hirneola polytricha.—Scleroderma verrucosum.—Scleroderma flavidum.—Xerotus fuliginosus.—Pleurotus striatulus.—Catastoma hyalothrix.—Seismosarca hydrophora. (See Note 431.)—Phillipsia polyporoides. (See Note 432.)

DOBBIN, FRANK, New York:

Calvatia lilacina.—Polyporus adustus.—Phlebia radiata.—Daedalea confragosa.—Stereum fasciatum.—Irpex cinnamomeus.—Polyporus radiatus.—Polystictus cinnamomeus (? old).—Hydnum subsquamosum.—Fomes fomentarius (young).

EVANS, I. B. POLE, South Africa:

Lentinus Sajor Caju.—Cladoderris infundibuliformis.—Stereum lobatum. —Hexagona tricolor.—Polystictus hirsutulus.—Polyporus gilvus.—Fomes applanatus.—Polystictus hirtellus.

FELIPPONE, FLORENTINE, Uruguay:

Polyporus gilvus.—Polystictus cinnabarinus.—Fomes australis. A nice photograph.

FISHER, GEO. L., Texas:

Lenzites betulina.—Polystictus versicolor.—Schizophyllum commune.—Polyporus gilvus.—Lentinus villosus.—Fuligo varians.—Merulius Corium.—Polyporus adustus.

FORBES, C. N., Hawaii:

Catastoma pedicellatum. (See Note 433.)—Tylostoma verrucosum.

GRANT, J. M., Washington:

Polyporus crispus.—Exidia recisa.—Polystictus Macounii.—Radulum cuneatum. (See Note 434.)—Hypoxylon fuscum.—Polystictus hirsutus var. albus.—Trametes serialis.—Stereum (Hymenochaete) tabacinum.—Xylaria

Hypoxylon.—Lycoperdon umbrinum.—Polystictus hirsutus.—Hypomyces lateritius?—Stereum spadiceum.—Polyporus adustus.

GRIFFITHS, DAVID, District of Columbia:

Polyporus elegans.—Fomes roseus. (See Note 435.)—Cenangium furfuraceum.—Morchella conica.—Morchella esculenta.—Hymenochaete tabacina.—Verpa Krombholzii.—Verpa Bohemica.—Poria Weirii. (See Note 436.) —Lycoperdon gemmatum.—Daedalea confragosa.—Bovista pila.—Pleurotus sapidus.—Fomes fomentarius.—Chlorosplenium aeruginosum.—Polystictus versicolor.—Stereum (Hym.) tabacinum.—Polystictus hirsutus.—Panaeolus campanulatus.—Peziza leiocarpa. (To be published in Mycological Notes.)—Lycoperdon umbrinum.—Fomes pinicola.—Fomes Pini.—Fomes laricis.—Polyporus volvatus.—Lachnella candidata?

HEDGCOCK, G. G., Florida:

Trametes lactea. (See Note 437.)

HIBBARD, MISS ANN, Massachusetts:

Gymnosporangium clavariaeforme.

KAUFFMAN, DR. C. H., Michigan:

Polyporus gilvus.—Scleroderma tenerum.

KAUFFMAN, DR. C. H., Washington:

Polyporus (or Polystictus) aurantiacus.—Polyporus hirtus.—Lycoperdon gemmatum.—Thelephora Americana, (mss.)—Polyporus Ballouii.—Lycoperdon nigrescens.—Polyporus albidus.—Sebacina incrustans.—Fomes igniarius.—Polyporus tomentosus.—Polyporus circinnatus.—Polystictus biformis.—Hydnum melaleucum.—Poria salicina.—Polyporus amorphus.—Geaster saccatus.—Geaster hygrometricus var. giganteus. (Geastrae, page 13.) —Fomes pinicola.—Polyporus leucomelas.—Fomes annosus. —Hydnum amicum.—Hydnum concrescens.—Fomes applanatus.—Polyporus benzoinus. —Polyporus griseus. (See Note 438.)—Lycoperdon pratense.

KAWAMURA, S., Japan:

Cordyceps sobolifera. With a photograph and interesting account of its occurrence in Japan, which will be published in Mycological Notes.

LATHAM, ROY, New York:

Tremella foliacea.

LONG, W. H., New Mexico:

Cytospora chrysosperma. As named by Mr. Long.—Fomes meliae.—Calvatia caelata?

MAIRE, RENE, North Africa:

Polyporus ochroleucus. (See Note 439.)—Fomes rimosus.—Trametes rosea.—Fomes annosus.—Trametes hispida.—Polystictus hirsutus.—Polyporus plorans.

MARLOTH, R., South Africa:

Polystictus coccineus. (See Note 440.)

NELSON, N. L. T., Florida:

Trametes hydnoides.—Fomes marmoratus.—Irpex tabacinus.—Hydnum ochraceum.—Xerotus nigritus.—Ozonium auricomum.—Stereum complica-

tum.—Polystictus versicolor.—Lycogala Epidendrum.—Lenzites striata.—Hypocrea Schweinitzii.—Polyporus gilvus.—Lenzites Brazilensis.—Polystictus pergamenus.—Stereum fasciatum.—Stereum (Hymenochaete) rubiginosum.—Lenzites saepiaria.—Stereum albobadium.—Catastoma pedicellatum.—Stereum bicolor.—Myriostoma coliforme.—Trametes lactea.—Poria (or Irpex) tulipifera.—Hydnum ochraceum.—Pleurotus nidulans.—Polyporus supinus.—Lenzites corrugata.—Polystictus hirsutulus.—Polystictus biformis?—Polyporus rhipidium.—Tylostoma campestre.—Polyporus adustus.—Septobasidium suffultum?—Lenzites betulina.—Polyporus (Ganodermus) lucidus.—Fuligo varians.—Stereum ochraceo-flavum.—Stereum strumosum.—Hemiarcyria rubiformis.—Daldinia concentrica.—Mycenastrum Corium. (See Note 441.)—Hydnum pulcherrimum.—Stereum frustulosum.—Fomes annosus.—Polystictus hirsutus.—Favolus europaeus.—Polystictus abietinus.—Polyporus dichrous.—Trametes Cubensis?—Septobasidium pedicellatum.—Stereum australe.

OVERHOLTS, L. O., Pennsylvania:

Hydnum zonatum.—Hydnum scobiculatum. (Cfr. Note 85, Letter 47.)—Hydnum velutinum. (Cfr. Note 229, Letter 56.)—Dacryomyces deliquescens. (See Note 442.)—Hydnum amicum.—Exidia recisa.—Polyporus amorphous. On Pinus rigida. "We made a half dozen collections last fall."—Tremellodendron merismatoides.—Tubulina cylindrica??—Polyporus dryadeus.—Cyathus stercoreus.—Clavaria Krombholzii.—Clavaria pulchra.—Tremella frondosa.—Hydnum rufescens.—Hydnum repandum. (See Note 443.)—Calocera dubia.—Hydnum subsquamosum.—Polyporus trabeus?—Hydnum laevigatum.

PAUL, J. T., Australia:

Fomes robustus.—Polyporus ochroleucus.—Stereum elegans.—Polystictus sanguineus.—Polyporus Eucalyptorum.—Polyporus arcularius.—Paulia resinacea. (To be published in Mycological Notes.)—Cordyceps Gunnii.—From New Zealand, Cordyceps Robertsii.

ROBINSON, R. G., New Zealand:

Cyttaria Gunnii. (To be published in Mycological Notes.)

SEAVER, FRED J., New York:

Peziza Castrica. This will probably prove to be same as Aleurina Lloydiana, which I hope is correct.

SHANTZ, H. L., Eastern Colorado:

Calvatia polygonia. (See Note 444.)

SPRAGUE, S. L., Ohio:

Peziza cerea. (To be published in Mycological Notes.)

STEVENSON, JOHN A., Porto Rico:

Guepinia spathulata.—Cyathus stercoreus.—Cyathus Earlei. (See Note 445.)—Cyathus Poeppigii.—Cyathus pallidus.—Geaster velutinus.—Lycoperdon albidum. (To be published in Mycological Notes.)—Geaster saccatus.—Lycoperdon piriforme??—Lycoperdon cruciatum??

STREETER, MRS. HANNAH, Pennsylvania.

Polystictus hirsutus.—Polyporus Schweinitzii.—Fomes annosus.—Polyp-

orus trabeus.—Hydnum scobiculatum.—Hydnum albonigrum.—Thelephora Americana (Mss.).—Thelephora radiata.—Thelephora palmata.—Tremellodendron candidum.—Xylaria Hypoxylon. Conidial.—Ustulina vulgaris.—Daedalea confragosa.—Hypoxylon coccineum.—Polyporus dichrous.—Stereum fasciatum, form australis.—Tremella foliacea.—Stereum fasciatum.—Polyporus Spragueí.—Polystictus balsameus.

TRASK, MRS. BLANCH, California:

Tylostoma obesum. (See Note 446.)

WEIR, JAMES R., Idaho:

A set of named, resupinate Thelephoraceae, much appreciated by me, as I have been enabled to get very little hold on this subject.

Corticium galactinum.—Peniophora carnosa.—Peniophora velutina.—Peniophora crassa.—Grandinia granulosa.—Stereum Chailletii.—Hymenochaete Curtisii.—Trametes laceratus. (To be published in Mycological Notes.)

WEIR, JAMES R., Montana:

Trametes hexagoniformis.—Polyporus Ellisianus.

NOTE 420.—**Fomes Robinsoniae from P. van der Bijl, South Africa.** This has setae and hyaline spores. It occurs on page 234 of my Fomes pamphlet (by inadvertence), due to having been originally misdescribed as having no setae. It also occurs on page 247 as Fomes squarrosus.

NOTE 421.—**Stereum lobatum, from P. van der Bijl, South Africa.** A most frequent species throughout the tropical world. These specimens were freshly collected and had a white or slightly alutaceous hymenium. On moistening and scraping I note the hymenium turns red. This is to me a new feature in connection with this species. There are species of Stereum, such as S. spadiceum, that are very sensitive when fresh, spotting red as soon as the hymenium is touched. This species belongs in the same section, but is far less sensitive. In fact, I never noticed it before, but find it a faint character of all the specimens I have tried. I presume I have more than a hundred collections. In addition, it is the most common species we have in the United States, or rather a small form of it called Stereum fasciatum, and Stereum australis (Note 115) is a Southern form with cinereous hymenium. Usually Stereum lobatum (which is badly named, for it is rarely lobed) is marked with bright, glabrous, brown zones. Sometimes it is almost unicolorous, then it is Stereum concolor, as named from Java. Rarely it is almost glabrous, then it is Stereum Galeottii (Note 365).

NOTE 422.—**Daedalea Eatonii, from P. van der Bijl, South Africa.** To the eye this plant is very similar to the common Trametes obstinatus of the tropics, and I am not sure that it is really different. This resemblance was not previously suggested to me. In South Africa, however, there is a thick "Fomes" form (Daedalea Dregeana, cfr. Note 343).

With regard to Trametes obstinatus, it was always a mystery to me how such a late species hunter as Cooke should have discovered such a common thing. Surely the old fellows, Fries, Berkeley, etc., had some name for it. I suspect it was the Polyporus cingulatus of Fries, but surely not of Berkeley.

NOTE 423.—**Trametes sepium.** We have a very common plant in this country that has become well established as Trametes sepium and was named by Berkeley. It is white, has large pores, is largely resupinate with a reflex border. In Europe it is an extremely rare plant. At least I never collected it but once, and then but scantily, and there are but few specimens in the museums. I have some nice specimens, recently sent me by Rev. Bourdot. It always occurs with us and in Europe on frondose wood. Recently Bresadola referred it to Trametes albida, Fries (as Daedalea), but I am not inclined to accept the reference, as I can see no resemblance whatever to Fries' figure, and this is all that is known of Daedalea albida. Fries left no specimens. The name Trametes sepium is so well affixed to the plant in America that I would not deem it advisable to change it on such vague evidence as this.

NOTE 424.—**Lenzites trabea.** A very common plant with us in the United States and which was called Lenzites vialis by Peck. It is not as frequent in Europe and is there known as Trametes trabea, Persoon. I have never felt that there was any warrant for reference to Persoon's species. There is no specimen in Persoon's herbarium, and it does not answer his description at all and Persoon compares it to Daedalea quercina. It was named Lenzites trabea in 1870 by Otth, a Swiss amateur, and as his specimens were distributed in several museums, there is no question about his naming. He did not attribute it to Persoon, but claimed it to be a new species. In fact, Otth did not know anything about Persoon's name. As the plant occurs in the United States and Europe, I think the European name should be used, but named correctly and attributed to Otth, and not to Persoon.

NOTE 425.— **Polyporus radiatus.** As mentioned in my pamphlet on the Polyporus and in Note 35, Letter 43, there has been some question as to the color of the spores of Polyporus radiatus. Both Pattouillard and Murrill have included it in a genus they discovered with "colored spores." I have a specimen from Rev. Bourdot that has the spores thrown down in mass, and they are white. Father Bourdot writes me that while the natural color of the spores is white, they are sometimes slightly colored from the coloring matter of the pileus, particularly in the older pilei that have been water-soaked. I think this is a correct explanation of the "colored" spores of Polyporus radiatus.

NOTE 426.—**Nummularia cinerea, from J. F. Brenckle, North Dakota.** Cotype of Rehm. Appears to me to be "Hypoxylon" atropunctatum, as known in American mycology.

NOTE 427.—**Mitremyces fuscus, from Chas. C. Brittlebank, Australia.** Two beautiful specimens. We gave an account of the plant in Mycological Notes, page 240, and a figure (Plate 69, fig. 2). It is the only species of Mitremyces known from Australia, notwithstanding there are four given in the Handbook, under the generic name Catastoma, which was only a generic juggle, not recognized by any one but its author. The genus has been generally known for nearly a hundred years as Mitremyces. This species is not known from any country but Australia. Mitremyces luridus, known from a single specimen at Kew, is only a depauperate Mitremyces fuscus. Mitremyces viridis and Mitremyces aeruginosus are both bulls. The former was based by Berkeley on a colored figure of Mitremyces Juhghuhnii, brought by Hooker from India. The color of the plant was olive with a faint trace of green, and the original figure which was too green, was more olive than green. Massee reproduced it, however, in Annals of Botany as bright green as paint could make it, about as true to color as the green elephant blocks they paint for children. But Mitremyces aeruginosus was a worse bull than that. Some one sent to the British Museum from Australia a specimen of Mitremyces fuscus which was misdetermined as Mitremyces viridis. Massee saw the specimen when he wrote his "monograph," and as it had been determined as "viridis" he helped the "green" idea along by naming it Mitremyces aeruginosus and describing it as "verdigris green." It is as black as a piece of coal, and always was, and it is Mitremyces fuscus, the only species known from Australia. This species is dark, almost black, with a red mouth, and is the only species known where the exoperidium falls off in one piece like a cap.

NOTE 428.—**Xylaria carpophila, from S. H. Burnham, New York.** Growing on hickory nuts. This Xylaria is curious in the choice of its habitat. It always grows on fruits of some kind, but I am satisfied now on studying the descriptions, photographs, and specimens I have, that there is but one species that grows on fruits. Persoon originally gave a good illustration of it, on beech nuts. It is rather rare in Europe, and under this name I find it recorded in Europe only on beech nuts (Persoon, Cooke, Tulasne, Traverso, Jaczewski). Tulasne named it Xylaria oxycanthae from English specimens found on haw berries, which Nitschke changed to Xylaria Fuckelii because Fuckel found it on the fruit of Carpinus, a very slight excuse for a change. In this country, Ellis records it on tulip tree cones, Schweinitz records it on the fruit of sweet gum and also named it Xylaria persicaria from specimens on buried peach stones. Beardsee sent it to me on the fruit of the dogwood (which I referred to Xylaria persicaria cfr. Note 121, Letter 49), and finally Mr. Burnham finds it on hickory nuts. I have gone over all my notes, photograph, and data as to all these "species" and have come to the conclusion that they are all one and the same thing.

NOTE 429.—**Polyporus Peckianus, from Mr. S. H. Burnham, New York.** An abundant collection of a rare plant. Specimens, while thin, are more fleshy and brittle than a typical Lentus as classed in my pamphlet. Spores abundant, are 2½ x 3½, hyaline, transparent, with a large gutta in one end.

NOTE 430.—**Xylaria digitata.** I have heretofore thought that our rather frequent plant usually referred to Xylaria digitata was Xylaria Cornu-damae, and not the same as the European, but these specimens from Mr. Burnham convince me that I was in error (cfr. Note 388, Letter 60). As I had decided, Xylaria Cornu-damae grows singly or two or three at the most, the bases separate, and has spores 6 x 24-28 mic., while Xylaria digitata grew many clubs from a common consolidated base, as originally shown in Persoon's figure, and the spores are not over 20 mic. long. This ample collection from Mr. Burnham, however, shows both manners of growth with spores about 20 mic. long, and I conclude that neither the spore variation, nor the consolidated bases, is a specific distinction. Xylaria Cornu-damae becomes for me a synonym for Xylaria digitata. It is a fairly common species in this country, but rather rare in Europe.

NOTE 431.—**Seismosarca hydrophora, from J. B. Cleland, Australia.** The genus Seismosarca, proposed by Cooke, can be maintained, I think, but not on the characters proposed. It is a Tremella with typical, cruciate basidia, and has on the surface irregular, colored blunt (cystidia?) hairs of some kind, with colored contents, corresponding to gloeocystidia. The genus might be maintained on this feature, for there is no such genus in Europe. We have with us a common plant, Exidiopsis alba (Letter 44, Note 48), which has similar bodies, but imbedded.

I was much interested in studying Cooke's type at Kew, for I was suspicious that Cooke had made a bull of it. He claimed that it has colored spores and based his genus on this, and drew a figure for the Handbook, showing the colored spores in situ on a basidia that has no resemblance to any basidia that ever grew on a tremellaceous plant. The specimen at Kew does have colored spores on it, but they are probably accidental and have no connection with the plant. As far as known, and probably as far as will ever be known, there is no tremellaceous plant with colored spores. The basidia are of the typical Tremella form, globose, 10-12 mic., with pale colored contents. They are near the surface of the plant, if not on the surface. I saw none with sterigmata, but there is no question about their identity. The "hairs" are of the "gloeocystidia" type, similar to those found imbedded in many Thelephoraceous plants,

like Stereum spadiceum, etc., but are borne on the surface. They have no resemblance whatever to Cooke's figure and are not "furcate at the base." In fact, Cooke gives a figure (94) in the Handbook consisting of spore, basidia, hairs and hyphae, and neither one of the four has the slightest resemblance, I believe, to anything found on the plant, or on any other plant belonging to the Tremellaceae. Apparently he got his idea in drawing this figure from his memories of some Hymenochaete. On scraping the specimen from Dr. Cleland, I found one spore, similar to a Coniophora spore, elliptical, colored, smooth, 12 x 20 mic., and the same as the spores described by Cooke. I may be mistaken, the plant may have colored spores. I hope Dr. Cleland will settle this point by observation of the fresh plant.

NOTE 432.—**Phillipsia polyporoides, from J. B. Cleland, Australia.** I judge from description only, as it is a new genus to me. If true, I see no application of the specific name. The genus Phillipsia is close to Urnula, though put in different sections in Saccardo. In fact, I do not catch the difference. This is a thick dark, coriaceous, arctuate cup-shaped plant, with large, hyaline, smooth spores, 12 x 36, and numerous dark, filiform paraphyses, slightly enlarged at apices.

NOTE 433.—**Catastoma pedicellatum, from C. N. Forbes, Hawaii.** This is an American species, but confined to our Southern States. It may be recognized among the Catastomas by having pedicellate spores. All the spores are not so characterized, as the pedicels fall off the ripe spores, but are retained by many.

NOTE 434.—**Radulum cuneatum, from J. M. Grant, Washington.** Pileus thin, light, cuneate, 2-3 cm. in diameter. Context white, fragile. Surface light brown, glabrous. Hymenium alutaceous, tubercular, with flattened, obtuse tubercules. Cystidia none. Spores 3-4 by 6-10, cylindrical, hyaline, smooth.

The pileate Radulums are rare. No species occur in Europe, and this is the third from the United States. This plant has little analogy to the other species we have. The feature of the species is the light weight, the tissue of fragile, spongy texture, composed of loosely woven, hyaline hyphae. But one other similar species in the world is known, viz., Radulum spongiosum of India.

NOTE 435.—**Fomes roseus, from David Griffiths, District of Columbia.** On Fir. This is quite different from the common Trametes carnea, with which it is confused in Murrill's work. It is quite rare, and this is only the third collection that I have received from this country. I presume I have a hundred collections of Trametes carnea.

NOTE 436.—**Poria Weirii, from David Griffiths, District of Columbia.** The occurrence in the East of this species recently named from Idaho (cfr. Note 227, Letter 54), is of interest. It grew on carbonized fir.

NOTE 437.—**Trametes lactea, from G. G. Hedgcock, Florida.** This was named from a specimen from Cincinnati, by Berkeley, as Trametes incana. Afterwards Fries named it as above from a specimen from Carolina. As the name incana was preoccupied, the Friesian name came into use. It is only the trametoid form of Daedalea ambigua, and it is strange that while we find Daedalea ambigua in abundance around Cincinnati, we have never met a specimen of the trametoid form which by chance was picked up first. The following three "species" are only modifications or conditions of one and the same thing.

Lenzites repanda, a most abundant, thin species in the tropical countries of the entire world.

Daedalea ambigua, the thicker, more temperate region form. I only know it from the United States.

Trametes lactea, the trametoid form, more frequent in tropical America.

NOTE 438.—**Polyporus griseus and Polyporus leucomelas.** Dr. C. H. Kauffman sends me these two species from Washington (N. W.) When dried they are virtually same in color and have the same peculiar spores, but Dr. Kauffman reports griseus as "pure white" when fresh, and leucomelas as fuligineous umber at first, pores white, becoming dark. As I stated in my Ovinus pamphlet, I think they are color forms of virtually the same plant.

NOTE 439.—**Polyporus ochroleucus, from Prof. Rene Maire, North Africa.** A frequent species in the East, but rare in the Mediterranean regions. It is absent from American flora, being replaced by Fomes Ohiensis. Rev. Torrend collected it in Portugal in recent years, but I know no other record from this region. A full account of this characteristic plant was given in Apus Polyporus, page 311. The specimen from Prof. Maire has a darker surface than the common plant in Australia.

NOTE 440. **Polystictus coccineus, from R. Marloth, South Africa.** In reality only a thick form of the common Polystictus sanguineus, with paler context. Over sixty years ago Fries named this from a specimen collected in the Marquesas Islands. The type has disappeared from Fries' herbarium, but a small cotype is at Kew. I never saw it before other than this. It seems to me quite peculiar, with pores deep vermillion color, as they are ordinarily in Polystictus sanguineus, but the context nearly a cm. thick, and much paler, only has a faintly red tint. There is not the strong contrast in Mr. Marloth's specimen, although the context is much paler than the pores. However, they are for me the same thing, and both are forms, or perhaps better called sports, of Polystictus sanguineus. It is compiled in Saccardo as Fomes (sic.).

NOTE 441.—**Mycenastrum Corium, from N. L. T. Nelson, Florida.** A characteristic "puffball" of many countries, common with us on our Western plains, but known from but very few localities east of the Mississippi. I am much pleased to get it from Florida.

NOTE 442.—**Dacryomyces deliquescens, from L. O. Overholts, Pennsylvania.** Not the usual form of this common species, but a contorted form, the first I have received. It was, no doubt, the original of Dacryomyces tostus, under which name Berkeley always referred our American plant.

NOTE 443.—**Hydnum rufescens and Hydnum repandum.** Mr. L. O. Overholts sends two collections that, I believe, show the difference between these two species. Several recent writers claim they are the same.

Hydnum rufescens is slender and dark. It is the plant that usually reaches me from correspondents. It should be "pubescent," according to the description, but all of my plants are smooth.

Hydnum repandum. This is more obese and paler than Hydnum rufescens. It is also smooth. There are connecting forms, but one would hardly refer Mr. Overholts' two collections to the same species.

NOTE 444.—**Calvatia polygonia, from H. L. Shantz, Eastern Colorado.** This is not a new species, for it has been known for many years. An excellent description of it was given by Morgan twenty years ago under the misname Calvatia pachyderma, Morgan having mistaken it for a species named by Peck. If Mr. Shantz has occasion to use the name in print, I hope he will add a formal description, and thus legalize it. It is a species that occurs only in the arid regions of the West and, while similar to Calvatia gigantea in form and size, differs in several respects, viz., the exoperidium, the gleba color, and the spores. I received this plant from Ernest Knaebel, New Mexico, in 1912. I made the same mistake as Morgan and referred it to Calvatia pachyderma, for which there was no excuse, for I had several specimens (including cotypes) of Calvatia pachyderma in the museum at the time. I probably trusted to my memory, and did not take the trouble to look them up. I never got these three species straight in my mind until I received these specimens from Mr. Shantz.

NOTE 445.—**Cyathus Earlei, from John A. Stevenson, Porto Rico.** (Cfr. Nidulariaceae, page 26.) This is a very rare tropical species and, I believe, a good one. These specimens are the third collection I have received. The species is in same section with the common Cyathus vernicosus, but has dark, almost black, cups, and spores much larger, in these specimens, 16 x 28 mic.

NOTE 446. **Tylostoma obesum, from Mrs. Blanch Trask, California.** Collected on the Salton Sea flats, April 15, 1916. This is a species, evidently, that occurs only in the very arid regions. (Cfr. Tylostomae, page 28.) It has been heretofore known only from a collection sent Ellis from Colorado many years ago. The prominent characters are the strong collar at base of peridium, and smooth spores.

NOTE 447.—**Unnamed Polyporus.** There are in our collection 78 specimens of white Apus Polyporus and 7 stipitate Polyporus, from correspondents in the United States, that are unnamed. Most of them, I suppose, are "new species," and I am sometimes tempted to break into print with them. But what is the use? Many of them are, no doubt, rare, sporadic, or adventitious forms, and to give them names would only obscure the subject. Still, if I worked on the same plan that others have, there would be eighty-five "new species" of American Polyporus, not one of which would probably ever be recognized again. One collection does not make a species, though the greater part of the so-called "new species" are based on a single collection. If these 85 collections were all that are in our museum, we should feel badly about it. But for every unnamed specimen there are a hundred named. I would define a good species as something its author knows when he sees it, and if he does not know it, and is not able to recognize it on sight, he had better not name it.

NOTE 448.—**Polyporus substygius, from J. Umemura, Japan.** I make the spores globose, 4 mic., hyaline, not colored, as I doubtfully published. The plant belongs to the Gilvus alliance (Section 96), instead of Section 100.

NOTE 449.—**Polystictus oniscus.** We recently collected this in Cuba. It is for us only a form of Polystictus Friesii which grew long, effused, with a narrow, reflexed border. At first I was considerably puzzled over it. Of course, I do not know that it was oniscus, as named by Fries, of which no specimen exists, but it answers the description and will save inventing a new name.

NOTE 450.—**Polyporus conchoides.** We gathered this plant in Cuba and it is an entirely different plant from Polyporus dichrous, with which it has been confused in American traditions. Polyporus conchoides, when fresh, is thin, pure white, both pores and surface, but on drying the pores assume a slight flesh-color. The texture and spores of both species are the same.

NOTE 451.—**Polystictus heteromorphus or Trametes heteromorpha.** There is a plant that we have rarely in our Eastern States, very similar to Trametes sepium. It has practically the same spores and the same pores, but it seems to be confined to acerous trees. We have been puzzling over it for some time. We believe it to be the same plant or the trametoid form of Lenzites heteromorpha as we saw it in Sweden. The plant is extremely variable as to the forms it takes. The Swedish plants are rather more Trametes than they are Lenzites. Our American plant is generally reflexed, and at times has a well-formed pileus. I think it is the same plant recently called Poria subsinuosa in Europe and Trametes hexagoniformis in this country. I have recently received some nice specimens of it from Rev. Bourdot, France, and the American specimens I get usually from Mr. Ames, Brooklyn.

LETTER No. 63.

Report of specimens received since last published letter. My best thanks are extended to those who have favored me with specimens.

There has been considerable delay in reporting on specimens received in the last few months, due to the large number received and to other demands on my time. At the present writing there are several packages that have not been worked with. I have packages from Dr. Cleland, several from Rev. Torrend, and others that I have not found time to study.

In my printed letter I do not give authorities for names, believing that the binomial should represent a plant name, but in acknowledging the specimens to my correspondents, I give the "authority" in event they desire to use the same. All the specimens are acknowledged by personal letter as soon as they come into my hands. Foreign correspondents may send specimens to my English address and they will reach me promptly, although in countries which have direct parcel post arrangements with the United States, it is best to send them by parcel post direct to me. Specimens may be sent to either of the following addresses:

C. G. LLOYD,
224 West Court Street,
Cincinnati, Ohio.

C. G. LLOYD,
95 Cole Park Road,
Twickenham, England.

Cincinnati, Ohio, November, 1916.

ALLEN, MISS L. C., Massachusetts:

Caeoma nitens.—Panus stipticus.—Geaster hygrometricus.—Stereum hirsutum.—Stereum fasciatum.

ARCHER, W. A., New Mexico:

Tylostoma Longii.—Polyporus corruscans.

BABCOCK, D. C., Ohio:

Clitocybe illudens.

BAKER, CHAS. H., Florida:

Clavaria laeta. (See Note 452.)

BALLOU, W. H., New York:

Polyporus dryadeus. (See Note 453.)—Fomes annosus.—Polyporus Spraguei.

BARBIER, M., France:

An interesting lot of specimens, all as named by Monsieur Barbier.

Hypocrea citrina. (See Note 454.)—Cudonia circinans.—Xylaria polymorpha.—Otidea radiculata.—Sarcoscypha coccinea.—Spathularia flavida.—

Verpa digitaliformis.—Daldinia concentrica.—Discina venosa.—Pseudoplectania nigrella.—Morchella deliciosa.—Helvella lacunosa.—Nectria coccinea.—Otidea onitica.—Peziza coronata.—Tuber rufum.—Hypoxylon coccineum.—Morchella esculenta.—Acetabula vulgaris.—Helvella albipes.

BENSON, BERRY, South Carolina:

Daldinia vernicosa. (See Mycological Notes, page 604.)

BENVINDO, DR. SAMUEL, Brazil:

Fomes rimosus.

BETHEL, E., Colorado:

Polyporus leucospongia.—Fomes pini.—Polystictus circinatus.—Polyporus adustus.—Trametes hispida.—Polystictus hirsutus.—Polyporus elegans.—Stereum spadiceum.—Polystictus zonatus.—Polystictus subchartaceus.

BIJL, P. VAN DER, South Africa:

The interesting specimens sent by Mr. van der Bijl and Miss A. V. Duthie, from South Africa, are affording more information concerning the plants that occur in this region than all that were heretofore known.

Polyporus (or Trametes) robiniophila. (Cfr. Apus Polyporus, page 314.) (See Note 455.)—Polyporus scruposus.—Trametes protea.—Fomes rimosus.—Fomes (Gano.) applanatus.—Polyporus (Gano.) lucidus.—Stereum lobatum.—Fomes pectinatus.—Daedalea Eatonii.—Trametes cingulatum.—Polyporus dichrous.—Fomes robustus.—Trametes ochrolignea. (See Note 456.)—Polystictus hirsutus.—Fomes connatus.—Trametes devexa.—Polystictus occidentalis.—Trametes glabrescens.—Trametes albotexta. (Will be published in Mycological Notes.)—Fomes (Gan.) annularis. (See Synopsis Fomes, page 268).—Lenzites Guineensis. (Will be published in Mycological Notes.)—Polystictus affinis.—Stereum glabrescens.—Hexagona niam-niamensis. (See Note 457.)—Lenzites repanda.—Polystictus xanthopus.—Polystictus luteus.—Stereum (Hym.) villosum.—Lentinus stuppeus.—Polystictus proteus.—Fomes melanoporus.—Polystictus xanthopus-concinnus. (Will be published in Mycological Notes.)—Hexagona similis.—Polystictus helveolus. (See Note 458.)—Polyporus anebus.—Polyporus vittatus.—Fomes senex.—Polyporus capensis. (See Note 459.)—Daedalea Eatonii.—Stereum (Hym.) tenuissimum.—Polystictus tabacinus.—Polyporus sulphureus.—Polyporus Patouillardii.?? (Immature.)—Trametes incondita.?? (Old specimens and doubtful.)—Polyporus ochroleucus.—Gramnothele mappa. (Cfr. Mycological Notes, page 581.)—Polyporus immaculatus.—Polystictus ochraceus.—Polyporus gilvus.—Irpex vellereus. (Cfr. Mycological Notes, pages 582 and 598.)—Trametes ochracea. (A thick form of Polystictus ochraceous.)—Polyporus favoloides.—Fomes conchatus.—Trametes Sycomori. (See Note 460.)

BLACKFORD, MRS. E. B., Massachusetts:

Polyporus cristatus.—Polyporus brumalis.—Tremellodendron pallidum.—Polyporus radiatus.—Hydnum mirabile.—Hydnum nigrum—Xylaria filiformis.—Xylaria polymorpha.—Xylaria corniformis—Xylaria Cornu damae.—Polyporus ovinus.—Xylaria Hypoxylon.—Scleroderma Cepa.

BONANSEA, DR. S., Mexico:

Xylaria Schweinitzii. (Will be published in Mycological Notes.)—Lycoperdon gemmatum.—Lenzites striata.

BRACE, L. J. K., Bahamas:

Cordyceps sobolifera. (A fine specimen, see account in Mycological Notes, No. 42, page 584.)—Clathrus crispus. (See Mycological Notes, No. 42, page 585.)—Polyporus fumosus?—Polystictus pinsitus.—Polystictus sanguineus.—Polystictus occidentalis.—Lenzites striata.—Polyporus tephroleucus?—Polyporus tricholoma.

BRENCKLE, J. F., North Dakota:

Bovistella echinella. (Published in Mycological Notes, page 602.)—Fomes scutellatus.—Polyporus dichrous.—Stereum (Hym.) Curtisii.—Fome pomaceus.—Polystictus conchifer. (See Note 461.)—Phlebia reflexa.—Poria punctata.—Crucibulum vulgare.—Plowrightia morbosa.

BRITTLEBANK, C. C., Australia:

Polysaccum pisocarpium.—Polysaccum crassipes.—Thelephora terrestris.—Catastoma hyalothrix.—Tylostoma egranulosum.—Tylostoma Readerii.—Tylostoma albicans.—Tylostoma Australianum.—Lycoperdon pusillum.—Mycenastrum Corium.—Clathus pusillus.—Geaster saccatus.—Geaster minimus.—Geaster pectinatus.

BUNTING, R. H., Africa:

Daldinia concentrica.—Cyathus limbatus.—Polyporus (Gan.) lucidus.—Lenzites deplanata.—Trametes lignosus.—Hexagona umbrinella.—Xylaria hypoxylon.—Thamnomyces Chamissonis.—Isaria Buntingii. (Will be published in Mycological Notes.)

BURNHAM, S. H., New York:

Polyporus borealis.

CHEEL, E., New South Wales:

Stereum hirsutum.—Polysaccum pisocarpium.—Phlebia reflexa.—Hexagona tenuis.—Polyporus vinosus.—Polystictis xanthopus.—Hexagona umbrinella.—Polystictus caperatus.—Trametes badia. (See Note 462.)—Stereum (Hym.) tenuissimum.—Polystictus setiporus.—Tylostoma Purpusii.—Tylostoma McAlpinianum.—Lycoperdon gemmatum.—Scleroderma verrucosum.—Lycoperdon caepeforme.—Tylostoma mammosum.—Catastoma hyalothrix.—Catastoma pedicellatum. (See Note 463.)—Stereum elegans.—Polyporus arcularius.—Thelephora terrestris.—Scleroderma vulgare.—Polyporus semilaccatus.—Auricularia mesenterica.—Lachnocladium congestum. (Will be published in Mycological Notes.)—Polystictus rigidus.—Polystictus ochraceo-stuppeus. (See Note 464.)—Thelephora myriomera. (Will be published in Mycological Notes.)—Polyporus (Gan.) ochrolaccatus. (See Note 465.)

CLELAND, DR. J. B., Australia:

Catastoma hyalothrix.—Polyporus Berkeleyi. (See Note 466.)—Polyporus anebus.—Fomes conchatus.—Fomes applanatus.—Phlebia reflexa.—Stereum elegans.—Trametes strigata.—Polystictus (or Trametes) Persoonii.

—Stereum semilugens. (See Note 467.)—Stereum lobatum.—Polyporus radiatus?—Bovistella Australiana.—Polyporus stereinus.

CRADWICK, WM., Jamaica:
Peziza Hindsii.—Polystictus pinsitus.

CRAWFORD, PROF. D. L., California:
Bovista plumbea.—Geaster rufescens.—Calvatia hesperia.?—Lycoperdon cepaeforme.

DEARNESS, PROF. J., Canada:
Merulius lacrymans. (Pileate form, will be published in Mycological Notes.)—Geaster pectinatus.

DESSENON, M. E., France:
Stereum insignitum.—Polystictus abietinus.—Diatrybe bullata.—Fomes conchatus.

DUPRET, H., Canada:
Merulius lacrymans.—Trametes carneus.—Polystictus abietinus.

DUPRET, H., New Hampshire:
Tremellodendron pallidum.

DUTHIE, MISS A. V., South Africa:
A fine lot of specimens have been sent by Miss Duthie, which, in connection with those received from Mr. van der Bijl, give more information of the plants that occur in South Africa than was heretofore known.

Polyporus lucidus.—Myriostoma coliformis.—Peniophora purpurea.—Geaster pectinatus.—Polyporus arcularius.—Geaster fornicatus.—Exidia glandulosa.—Rhinotrichum rubiginosum.—Dacryomyces digressus. (Will be published in Mycological Notes.)—Lenzites trabea.—Cyathus pallidus.—Geaster saccatus.—Radulum lirellosum.—Calvatia lilacina.—Hydnum Henningsii. (See Mycological Notes, page 597.)—Daldinia concentrica.—Scleroderma laeve. (See Note 468.)—Poria spissa.—Bovistella oblongispora. (Will be published in Mycological Notes.)—Sclerogaster Africanus.—Tremella lutescens.—Cladoderris spongiosa. (See Note 469.)—Laschia Duthiei. (Will be published in Mycological Notes.)—Polyporus poculus. (Will be published in Mycological Notes.)—Guepinia spathularia.—Stereum cinerescens.—Lachnea hemisphaerica.—Tylostoma cyclophorum.—Tremella mesenterica.?—Catastoma anomalum. (Will be published in Mycological Notes.)—Tylostoma mammosum. (See Note 470.)—Clavaria stricta.?—Calvatia lilacina var. fragilis.—Polysaccum crassipes.—Battarrea phalloidea.—Calocera cornea.—Scleroderma verrucosum.—Dacryomyces deliquescens—Polystictus versicolor.—Lycoperdon pusillum.—Scleroderma Cepa.—Lycoperdon pratense.—Catastoma Juglandaeformis. (?young.)—Hypoxylon fuscum.—Lentinus ursinus.—Scleroderma tenerum—Stereum hirsutum.—Hypocrea rufa.—Guepinia spathularia, form lata. (See Note 471.)—Aleurodiscus ? cornea. (Will be published in Mycological Notes.)

EICH, OTTO, Ohio:
Hydnum erinaceum.

FISHER, GEO. L., Canada:

Lenzites betulina.—Xylaria polymorpha.—Trametes sepium.—Polyporus (Gan.) lucidus.

FISHER, GEO. L., Texas:

Lycoperdon cruciatum.—Lycoperdon umbrinum.—Bovistella Ohiensis.—Fomes marmoratus.—Lentinus villosus.—Lentinus strigosus.—Fomes (Gan.) leucophaeus.—Polyporus gilvus.

FROGGATT, W., West Australia:

Polyporus corruscans. (See Note 472.)—Polysaccum pisocarpium.—Scleroderma Cepa.—Polyporus ochroleucus.—Calvatia lilacina.—Polyporus gilvus.

GONO, M., Japan:

Polyporus gilvus.—Rhinotrichum rubiginosum.—Polystictus azureus.—Hydnum zonatum.

GOSSWEILER, J. W., Africa:

About fifty years ago an article on fungi of Angola was printed in the Transactions of the Linnaean Society of London. This is the only account, we believe, of plants in this region, and it was only fragmentary. The specimens from Mr. Gossweiler throw light on several of these species, and are the first real information we have had of them. Of the six species Mr. Gossweiler sends, three were only known from old accounts.

Podaxon loandensis. (See Note 473.)—Xylaria variabilis. (Will be published in Mycological Notes.)—Mutinus bambusinus. (Will be published in Mycological Notes.)—Polystictus melanospilus.—Geaster velutinus.—Polyporus (Gan.) Umbraculus. (Will be published in Mycological Notes.)

GRANT, J. M., Washington:

Daldinia concentrica.—Geaster triplex.—Polystictus Sequoiae.—Trichia varia.—Clavaria stricta.—Stereum Curtisii.—Diderma crustaceum.—Stereum (Hym.) cinnamomea.—Irpex Owensii. (Will be published in Mycological Notes.)—Polystictus abietinus.—Polystictus (or Trametes) cuneatus. (Published in Mycological Notes, page 600.)—Stereum hirsutum.—Polystictus Macounii.—Trametes serialis.—Guepinia occidentalis. (Published in Mycological Notes, page 600.)—Trametes carnea.—Fomes igniarius.—Gyromitra esculenta.—Fomes pinicola.—Fomes pini.—Polyporus volvatus.—Hypoxylon multiforme.—Polyporus adustus.—Stereum (Hym.) Curtisii.—Stereum diaphanum.—Lycogala Epidendrum.—Stereum Sowerbyi. (Will be published in Mycological Notes.)—Exidia candida. (Will be published in Mycological Notes.)—Ceratiomyxa mucida.—Stereum vellereum.

GRIFFIN, D. B., Vermont:

Helvella elastica.—Leotia marcida.—Discina perlata.—Clavaria fragilis.—Polyporus albellus.—Geaster minimus.—Xylaria digitata.—Lenzites betulina—Sarcoscypha floccosa.—Exidia glandulosa.—Fomes conchatus.—Cenangium furfuraceum.—Urnula Craterium.—Pustularia pustulata.—Stereum rufum.—Sarcoscypha coccinea.—Sticta radiata.

HADLEY, A. M., Vermont:

Xylaria polymorpha (conidial).

HIBBARD, MISS A., Massachusetts:

Lenzites betulina.—Polyporus spumeus. var. malicolus.—Stereum (Hym.) tabacinum.—Merulius aureus.—Polyporus radiatus.—Polyporus stipticus.—Xylaria hypoxylon.

HONE, MISS DAISY, Minnesota:

Daedalea confragosa.—Daedalea unicolor.—Polyporus adustus.—Hypoxylon coccineum.—Tremellodendron pallidum.—Aleurodiscus Oakesii.—Polystictus versicolor.—Polyporus trabeus.—Xylaria polymorpha.—Bulgaria inquinans.—Isaria farinosa.

HUMPHREY, C. J., Wisconsin:

Asterodon investiens.—Polyporus caesius.—Polystictus velutinus.—Poria attenuata.—Clitopilus abortivus.—Polyporus semisupinus.—Odontia fimbriata.

KEIHNER, ROBERT M., Pennsylvania:

Hemitrichia vesparium.

KIRKWOOD, MRS. A. V., Australia:

Polyporus (Amaur.) rudis.—Geaster saccatus.—Stereum elegans. (Published in Mycological Notes, page 598.—Polystictus versicolor, irpicoid condition. (See Note 474.)—Morchella esculenta.—Morchella conica.—Morchella angusticeps. (See Note 475.)—Polyporus pallidus.—Polyporus gilvus.—Polyporus australiensis.—Polyporus arcularius. (See Note 476.)—Polyporus rosettus. (Published in Mycological Notes, page 601.)

KRIEGER, L. C. C., California:

Scleroderma verrucosum.—Scleroderma Cepa.—Lysurus Mokusin. (Published in Mycological Notes, page 586.—Tremella mesenterica.—Stereum hirsutum.—Exidia glandulosa.—Schizophyllum commune.—Polyporus corruscans. A beautiful specimen, representing the species perfectly—Polyporus albidus. (See Note 477.)

LEEPER, B., Ohio:

Xylaria subterranea.?—Hypoxylon coccineum.—Xylaria digitata.—Hydnum pulcherrimum.—Hypocrea sulphurea.—Hydnum adustum.—Polyporus spumeus.—Polyporus giganteus.—Fomes applanatus.

LONG, W. H., New Mexico:

Calvatia gigantea.

LOWE, MRS. F. E., Florida:

Trametes hydnoides.—Schizophyllum umbrinum. (Will be published in Mycological Notes.)—Stereum membranaceum. (See Note 478.)

LOWE, MRS. F. E., Massachusetts:

Polyporus radiatus.—Xylaria polymorpha.

M'FARLAND, FRANK T., Michigan:

Hydnum strigosum. (A fine specimen of a rare species.)

MIYABE, K., Japan:

Polyporus semilaccatus.—Lenzites Berkeleyi.—Polystictus pellucidus.—Polystictus unicolor.?—Daedalea Kusanoi.—Trametes lactinea.—Lenzites

striata.—Irpex consors.—Polystictus elongatus.—Polyporus dichrous.—Xylaria polymorpha.? (Will be published in Mycological Notes.)—Lenzites subferruginea.—Schizophyllum commune.—Polyporus lucidus.—Irpex Noharae. (Published in Mycological Notes, page 601.)—Polystictus sulcifer.—Daedalea gibbosa.—Polystictus polyzonus.—Polystictus subaffinis.—Trametes heteromorpha.—Polyporus sulphureus.

NELSON, N. L. T., Florida:
Lycoperdon piriforme.—Lycogala Epidendrum.—Merulius Corium.

NOBLE, MRS. M. A., Florida:
Polystictus focicola.—Lentinus lepideus.—Guepinia spathularia.—Cyathus stercoreus.—Scleroderma Cepa.—Lenzites saepiaria.—Polyporus arculariformis.—Xylaria Hypoxylon.

OVERHOLTS, L. O., Pennsylvania:
Vibrissea truncorum.—Phlebia merismatoides. (See Note 479.)—Irpex (or Poria) tulipifera.—Irpex lacteus.—Polyporus modestus.—Peniophora Allescheri.??

OVERHOLTS, L. O., Alabama.
Polyporus amygdalinus. (Cfr. Letter 60, Note 331.)

OWENS, C. E., Oregon:
From China.—Cordyceps sinensis.

PATTERSON, FLORA W., Colorado:
Catastoma subterraneum.

PECKOLT, GUSTAVO, Brazil:
Fungus undeterminable. (See Note 480.)

RICK, REV. J., Brazil:
Polyporus (Ganod.) formosissimus. (See Note 481.)—Polystictus versicolor.—Lenzites deplanata.—Polyporus rigidus.—Polyporus Caryophyllus.—Lycoperdon piriforme.—Polystictus haedinus.—Polyporus lucidus.—Polyporus varius.—Polystictus pinsitus.—Hirneola auricula-Judae.—Hirneola auricula-Judae, form Móelleri.—Stereum bicolor.—Stereum caperatum. (See Note 482.)—Discina trachycarpa.—Polyporus fissilis.—Trametes cervinus.—Polyporus guaraniticus. (See Note 483.)—Geopyxis ciborioides.—Daedalea subcoriacea. (See Note 484.)

RITCHIE, A. H., Jamaica:
Trametes hydnoides.—Lenzites striatus.—Polystictus pinsitus.—Lentinus strigosus.—Schizophyllum commune.—Polystictus sanguineus.—Polystictus maximus.—Cordyceps sphaecocephala. (See Note 485.)—Xylaria Hypoxylon.

SCARFE, W. A., New Zealand:
Calvatia gigantea.—Fomes nigro-laccatus.

SCHUMO, S. L., Pennsylvania:
Tubulina cylindrica.

STEVENSON, JOHN A., Porto Rico:

Kretschmaria caenopus.—Fomes marmoratus.—Polyporus semilaccatus. (See Note 486.)—Polystictus pinsitus.—Polyporus zonalis.—Polystictus elongatus.—Lycoperdon albidum.—Cyathus Poeppigii.—Geaster mirabilis.—Isaria Barberi. (See Note 487.)—Hirneola auricula Judae.—Lycoperdon pusillum.—Cyathus Earlei.—Irpex lacteus.—Sphaerobolus stellatus.—Polyporus subfulvus.—Polyporus licnoides.—Polystictus polyzonus. (See Note 488.)—Polystictus sinuosus. (Will be published in Mycological Notes.)—Polystictus velutinus.—Laternea triscapa.—Tremella rufolutea.?

STEVENSON, WM. C., JR., Florida:

Polyporus gilvus.—Polyporus supinus.—Lentinus villosus.—Polystictus sanguineus.—Hypochnus rubrocinctus.—Fomes (Gan.) zonatus.—Polyporus cuticularis.—Irpex pachylon.—Fomes marmoratus.—Polyporus dichrous.—Polyporus valenzuelianus.—Trametes cubensis.

STOCKER, DR. S. M., Minnesota:

Fomes pinicola.—Polyporus circinatus.—Polyporus trabeus.—Polystictus zonatus.—Peziza badia.—Morchella conica.—Peziza vesiculosa.

STOWARD, DR. F. W., Australia:

Polyporus australiensis.—Stereum hirsutum.—Rhizopogon rubescens.—Phlebia reflexa.—Fomes robustus.—Scleroderma Cepa.—Secotium acuminatum. (Will be published in Mycological Notes.)—Polystictus cinnabarinus.—Trametes cupreo-rosea.—Hexagona Gunnii.—Polyporus gilvus.—Polyporus scruposus.—Fomes pomaceus.—Polysaccum crassipes.—Lycoperdon cruciatum. (Will be published in Mycological Notes.)

TORREND, REV. C., Brazil:

Fomes rimosus.—Hexagona variegata.—Polystictus trichomallus.—Polyporus (Amaur.) omphalodes.—Fomes Robinsoniae.—Fomes fulvo-umbrinus. (See Note 489.)—Polyporus vinosus.—Stereum affine.—Fomes melanoporus.—Polyporus mutabilis.—Polyporus inamoenus.—Polyporus guaraniticus.—Polyporus subfulvus.—Favolus tessellatus. (See Note 490.)—Polyporus lucidus.—Polyporus terebrans. (See Note 491.)—Polyporus (Amaur.) auriscalpium.—Polyporus Guyanensis.—Polyporus pallido-sporus. (See Note 492.)—Polyporus (Gan.) dorsalis. (Will be published in Mycological Notes.)—Laschia papulata.—Polyporus (Amaur.) subrenatus. (Will be published in Mycological Notes.)—Laschia pezizoidea.—Trametes ocellata. (Will be published in Mycological Notes.)—Polyporus globocephalus (Will be published in Mycological Notes.)—Polyporus lignosus.—Trametes fibrosa.

UMEMURA, J., Japan:

Polyporus favularis. (Will be published in Mycological Notes.)—Hysterangium Phillipsii. (Will be published in Mycological Notes.)—Polystictus versicolor form nigricans.—Geaster lageniformis.—Polystictus versicolor.—Stereum duriusculum.—Polystictus hirsutus—Polyporus semilaccatus. (See Note 493.)—Polystictus cinnamomeus.—Craterellus dubius. (See Note 494.)—Cyathus Hookeri.—Cordyceps sobolifera. (Will be published in Mycological Notes.)—Nidula microcarpa.—Polyporus amygdalinus. (See

Note 495.—Polyporus cuticularis.—Hydnum amicum. (See Note 496.)—Cyclomyces Greenii. (Will be published in Mycological Notes.)—Hydnum auriscalpium. (See Note 497.)—Elaphomyces Japonica. (Will be published in Mycological Notes.)—Cordyceps capitata var. Canadensis. (Will be published in Mycological Notes.)—Polystictus affinis.—Panus stipticus.—Polystictus flabelliformis form Japonica. (Will be published in Mycological Notes.)

WEIR, JAMES R.:

A nice lot of Thelephoraceae, all (excepting one) as named by Mr. Weir. Among them is one of Burt's unpublished species. My best thanks are extended to Mr. Weir for this contribution.

Exobasidium Andromedae.—Peniophora cinerea.—Stereum tabacinum.—Stereum tuberculosum.—Thelephora caryophyllea.—Stereum hirsutum.—Stereum sulcatum. (Will be published in Mycological Notes.)—Peniophora globifera.—Peniophora glebulosa.—Corticium laetum.—Corticium vagum.—Coniophora puteana.

WERKENTHIN, F. C., New Mexico:

Lycoperdon atropurpureum.

WHETSTONE, M. S., Minnesota:

Polyporus elegans.—Peziza occidentalis.—Favolus? europaeus?—Psilopezia nummularis.—Lentodium squamulosum.—Pleurotus subpalmatus.—Enteridium Rozeanum.—Claudopus nephritica (cotype).

WILBER, MISS RUBY B., Connecticut:

Polyporus lucidus.—Xylaria Hypoxylon?—Lycogala epidendrum.—Fuligo varians.—Sarcoscypha occidentalis.—Clavaria cinerea.—Xylaria polymorpha.—Rhizina undulata.—Peziza repanda.—Sphaerospora confusa.—Hypoxylon cohaerens.—Phallogaster saccatus.—Daldinia vernicosa.—Paxillus panuoides.—Lentinus strigosus.—Bulgaria inquinans.

YASUDA, PROF. A., Japan:

Polystictus glabratus. (Will be published in Mycological Notes.)—Hydnum helvolum.—Irpex obliquus.—Poria versipora.—Stereum Burtianum.—Thelephora Japonica. (See Mycological Notes, page 597.)—Stereum sulcatum.—Cudonia convoluta.—Hydnum concrescens.—Hirneola picea.—Merulius castaneus.—Ciliciopodium roseum.—Nitschkia cupularis.—Hydnum alboniger.—Paxillus panuoides.—Fomes lamaensis.—Polyporus ochrotinctus.—Polyporus umbellatus. (See Note 498.)—Hydnum discolor.—Pseudocolus Rothae. (Published in Mycological Notes, page 586.)

NOTE 452.—**Clavaria laeta**, from Chas. H. Baker, Florida. This is the first time we ever saw an orange Clavaria. They were sent fresh and the color well matches Ridgway's orange chrome.

Clubs simple, 2-4 inches high, compressed when old, stuffed. Color bright orange. Basidia club shape with reddish, granular contents, long sterigmata. Spores globose, 6-7 mic. smooth, with large guttae, subhyaline, appearing pale reddish under the glass.

We place a question mark after any determination made from description only, and we have never studied the types of Clavarias. This species was named from Ceylon, and of course it is not certain that it is the same plant as from Florida, although the "description" agrees. There is also an orange species from Cuba, C. laeticola, which is probably the same thing though described as "scarcely an inch high." We have the record by Schweinitz of an orange Clavaria from Pennsylvania, C. aurantio-cinnabarina, but it does

not fit this description and the plant is unknown to me. No type exists. Dr. Herbst told me once that he had found it in the mountain regions. It is improbable that it is the same as the tropical plant.

NOTE 453, **Polyporus dryadeus,** from W. H. Ballou, New York. Mr. Ballou reports this fairly common on his collecting ground. It is supposed to be rare in the East, and Professor Peck only collected it in very recent years.

NOTE 454.—**Hypocrea citrina,** from M. Barbier, France. I am glad to get European material of this, for the name was always misapplied by Ellis in the United States to Hypocrea sulphurea, a very different plant. Hypocrea citrina, if it occurs at all with us, is not "common throughout the United States and Canada," as stated in Ellis, N. A. Pyrenomycetes.

NOTE 455.—**Polyporus (or Trametes) robiniophila,** from P. van der Bijl, South Africa (cfr. Apus Polyporus, page 314). Same on comparison as the American plant, and I think this is the first time it has been recognized outside of America. The context of the African plant is more firm. The spores globose (or many, piriform) 7-8 mic. are the same, also pores, color, etc. With us Polyporus robiniophila grows only on the locust tree (Pseudacacia.)

NOTE 456.—**Trametes ochrolignea,** from P. van der Bijl, Africa. Pileus woody, sessile, 4 to 6 inches in diameter, an inch thick. Surface uneven, not zoned, reddish brown (Rood's brown, Ridgway), minutely pubescent. Context hard, woody, yellow. Pores round, or elongated, medium, somewhat irregular. Spores 3x6, cylindrical, hyaline, smooth.

Trametes Zimmermanni, a species named in mss. at Berlin, and Trametes ochro-flava, of Brazil, which is really a Fomes, are the only other species known to me with yellow context. Although the hymenial configuration is so different, with same texture, context color and spores, Daedalea Dregeana, Daedalea Eatonii, and Trametes ochrolignea are for me variations of the same species. Zones of annual growth and indistinct pore strata are seen in Trametes ochrolignea so that it is really a Fomes.

NOTE 457.—**Hexagona niam-niamensis,** from P. van der Bijl, South Africa. It is a terrible misfortune for a plant to bear such a barbarous name as this, and we would not use it if we had any other. Hennings was particularly happy (or rather unhappy) in the selection of his names. This Hexagona has very large pores, that are glaucous in some specimens and not in the others. I cannot understand the glaucescence of some Hexagona pores and wish some one who has the opportunity to observe the growing plants would explain it (cfr. Syn. Hexagona, page 4). This species has not previously been received by me. I only knew it from the type at Berlin.

NOTE 458.—**Polystictus helveolus,** from P. van der Bijl, South Africa. This is only a large pored form of the common Polystictus occidentalis. The old discoverers of "new species" made many useless names which would have been better referred to Polyporus occidentalis. The following is the list, in our opinion, as we have found them: scytinus, Berkeley; xanthocyclus, Klotzsch; scorteus, Fries (=thick specimen); devexa, Berkeley (the thick Trametes form); badio-lutescens, Kalchbrenner; aculeatus, Léveillé (viz. Zoll. 2055) the type cited, though the "type" labeled at Leiden (Zoll. 2046) is an entirely different plant; cyclodes, Fries; helveolus, Fries (this is the rigid, large-pored form same as Mr. van der Bijl sends); minuto-sinuosa, Klotzsch, as Daedalea, published as Daedalea sinuosa by Fries, and based on resupinate Polystictus occidentalis; illotus, Kalchbrenner; and no doubt others which we did not note.

NOTE 459.—**Polyporus capensis,** from P. van der Bijl, South Africa. It agrees with lucidus in laccate surface, context, pores, spores, etc., but differs in being subsessile. This South African form has had no special name to my knowledge, but it should have. Generally it has a short, thick stem, sometimes subsessile. It is ludicus in all things excepting its stem features, and the context is harder and zonate. We get it from several collectors in South Africa, and it is evidently frequent there. The type form of Polyporus lucidus does not occur in South Africa to our knowledge. I presume this is orbiformis of Fries, which was based on a resupinate specimen, inadequate to decide, and the name has no application to the plant if correct.

NOTE 460.—**Trametes Sycomori,** from P. van der Bijl, South Africa. The white Trametes are very puzzling. There are two common ones in the tropics.

Trametes lactinea, common in the East (Synonyms, levis from Ceylon, Moritziana from Java, hololeuca (Cooke not Kalchbrenner) from Australia, and Muelleri in part).

Trametes lactea, in the American tropics, which is the trametoid form of the common Lenzites repanda. (Synonyms, incana, Berk., but doubtful, Lev., glaberrima from United States.)

Trametes Sycomori is very close to Trametes lactinea, and I am not sure they can always be distinguished. In type idea it differs in harder, rougher surface. Thick (not thin) pore walls. The spores scanty in the specimen are, if correctly seen, subglobose, 3x4.

NOTE 461.—**Polystictus conchifer,** from Dr. J. F. Brenckle, North Dakota. On Ostrya Virgiana. My impression was it only grew on elm. I never saw it on any other host and it is common with us.

NOTE 462.—**Trametes badia,** from E. Cheel, New South Wales. There is a series of very similar plants, thin, rigid, with brown context, that could be called Polystictus or Trametes either, and have been called both. I believe all have same "structure" and grade into each other. They differ chiefly in degree of fibrillose development of the surface and size of pores. For my own convenience, I have arranged a Key as follows:

Nonzonate—pores very minute, Trametes badia.
Nonzonate—pores medium, Trametes aspera.
Nonzonate—pores relatively large, Trametes fuscella.
Zonate—Trametes heteropora.

In addition Trametes strigata is an Australian species, similar, but much thicker. It is reported, I believe in error, from the Philippines. I only know it from Australia, and it is also called Polyporus xerophyllaceus and Fomes Curreyi in Saccardo. Trametes fuscella originally is a thin form of heteropora, but we use it for the corresponding non-zonate plant to avoid inventing a new name.

NOTE 463.—**Catastoma pedicellatum**, from E. Cheel, New South Wales. This is the third collection I have from Australia, having received the plant in 1905 from D. McAlpine, and in 1907 from Walter W. Froggatt. The Australian plant is exactly the same as our American plant, and is distinguished by its rough spores and long (16-20 mic.) pedicels. With us it only occurs in our Southern States. It was sent by Ravenel to Berkeley, who called it Bovista nigrescens (sic.) and specimen so labeled is still at Kew. Afterwards Morgan named it as above from this same collection.

NOTE 464.—**Polystictus ochraceo-stuppeus**, from E. Cheel, New South Wales. Pileus erect, confluent, somewhat rosette form. Surface ochraceous, soft tomentose, not zoned. Context dry, soft, punky, ochraceous. Pores minute, adustus. Cystidia none. Spores not known to me.

In general color much like Polystictus ochraceus, but context not of the same nature. The soft, punky context is similar to species of Trametes, as T. lactinea rather than to other Polystictus. We would put it in section with Polystictus occidentalis, though its context relations are different entirely. The specimen, while well developed, grew on an ash floor, and the form like the rosette form of Polystictus versicolor, when growing on top of a log, is probably not the normal form. We therefore do not present a photograph.

NOTE 465.—**Polyporus (Gan.) ochrolaccatus**, from E. Cheel, New South Wales. This is an interesting addition to the Australian flora. Heretofore it was only known from the Philippines, and it is very rare there. When I was in Europe there was but one collection known (the old Cummings' collection), but it has recently been refound in the Philippines. The Australian plant is exactly the same as that from the Philippines, and is a most peculiar species.

NOTE 466.—**Polyporus Berkeleyi**, from Dr. J. B. Cleland, Australia. I do not know as to its manner of growth (cfr. Pol. Issue, page 86) but the single pileolus sent is, as to texture, color, pores, spores, and every character, exactly the same as our American plant. The single pileolus at Kew, called Polyporus Zelandicus, and from Japan, called Polyporus Dickinsii, are both undoubtedly the same. We are glad to definitely locate this species in Australia.

NOTE 467.—**Stereum semilugens**, from Dr. J. B. Cleland, Australia. This is the first collection I have gotten. The surface is relatively smooth, and concolorous with the context, ferruginous brown. The hymenium is cinereous, reminding one of Polyporus adustus. Cystidia none. Spores are cylindrical, 4x12-14 mic. straight, or arctuate. It is a good species, different from anything of Europe or America.

NOTE 468.—**Scleroderma laeve**, from Miss A. V. Duthie, South Africa. The name is based on a specimen so named by Léveillé, at Paris, which never broke into print. As to shape, rooting base, and thin peridium, it corresponds to Scleroderma verrucosum, but has a smooth peridium. In my opinion it is a smooth form of Scleroderma verrucosum.

NOTE 469.—**Cladoderris spongiosa**, from Miss A. V. Duthie, South Africa. A nice collection which shows the relative value of the papillae in this genus. Some specimens are densely covered with papillae, others are almost devoid of them. Spores (abundant in this collection) are elliptical, 4x8, hyaline, smooth.

NOTE 470.—**Tylostoma mammosum form**, from Miss A. V. Duthie, South Africa. This is not exactly the same form as the European form, having an uncolored mouth, is more robust and the exoperidium does not peel away so perfectly. It is close, however, and has same spores and capillitium. As a form it is unnamed, but there are too many "forms" of this species named now.

NOTE 471.—**Guepinia spathularia** (form lata), from Miss A. V. Duthie, South Africa. The common Guepinia spathularia occurs in the United States, tropical America, South America, Pacific Islands, and Africa. We found it frequent in Samoa. But strange to say it is unknown from Europe. Usually it has a short, pubescent stalk. The plant Miss Duthie sends is subsessile and much broader than usual, but is not really a good form for other plants of same collection, take the usual size and shape.

NOTE 472.—**Polyporus corruscans**, from W. W. Froggatt, Australia. A fine specimen, and as far as I remember, the first time I have gotten it from Australia. This is a well-formed specimen and does not look exactly like our European and American plant. At first I was much puzzled over it, and was on the point of giving it a name, when I noticed indications of a "mycelial core," and on comparing it, I now have no doubt that it is the plant I have considered so many times from Europe and America. (Cfr. Apus Polyporus, page 360, Notes 47, 149, 243, 398.) Polyporus corruscans is usually on oak in Europe and United States. I do not know the Australian host.

NOTE 473.—**Podaxon loandensis**, from J. Gossweiler, Africa Occidentalis. About fifty years ago Welwitsch, the celebrated African botanist and botanical collector, sent to London a set of fungi collected in Angola and Benguella in practically the same region, Portuguese,

West Africa, known as Loanda of to-day. These fungi are mostly preserved at the British Museum. They were published in Trans. Linn. Soc. Vol. 26 (1868), under the joint name of Welwitsch and Currey, although Currey was really the author, for Welwitsch was a collector, not a student of mycology.

Currey named three species of Podaxon from this locality—Podaxon mossamadensis, Podaxon loandensis, and Podaxon elatus. The former two are good species as far as "good species" of Podaxon go, the latter is same as Podaxon carcinomalis, named from the Cape region. All Podaxons are much alike. The main difference is the size and coloration of the spores and color of capillitium, and I suspect that the color is largely a question of ripeness. The specimen that Mr. Gossweiler sends does not exactly agree with either of Currey's specimens (types). Loandensis type has hyaline capillitium and dark olive spores about 12x16. These have same sized spores, but both spores and capillitium are dark reddish color. I think it is the mature condition. Podaxon mossamadensis has smaller, subglobose spores, about 10 mic. deep red color. Podaxons are not abundant in the museums, although about twenty-five alleged species are named. I have sorted them out into eleven species on spore and capillitium characters, and I think the eleven species are not all good.

NOTE 474.—**Polystictus versicolor**, from Mrs. A. V. Kirkwood, Australia. An irpicoid condition. Many similar plants such as Daedalea unicolor often take irpicoid conditions, but I do not remember noting this before in connection with the common Polystictus versicolor.

NOTE 475.—**Morchella angusticeps**, from Mrs. A. V. Kirkwood, Australia. I question if it is practical to maintain this as a species distinct from Morchella conica. About the only difference is the lesser prominence of the cross rays.

NOTE 476.—**Polyporus arcularius**, from Mr. A. V. Kirkwood, Australia. This is a widespread species in the world, and we get it from most every country. In the United States and Europe it is rather uniform, usually brown and squamulose. In Australia is seems to vary more. This specimen is brown and almost smooth. From Margaret L. Flockton we have a collection much darker with a squamulose stem, and from J. Simmonds a collection smooth and of pale color. The pores and spores are the same in them all, and while "species" could be based, and have been based, on the varying colors and scaliness, it is much less embarrassing to hold them all as one species.

NOTE 477.—**Polyporus albidus**, from L. C. C. Krieger, California. I am satisfied I have two and probably more species confused under this name. I refer to albidus, all the white specimens of Polyporus with a hard texture (dried), minute pores, and growing on acerous wood. I have looked over the collections and though it does not seem to me they are all the same species, yet I do not know exactly how to sort them out.

NOTE 478.—**Stereum membranaceum**, from Mrs. F. E. Lowe, Florida. This is frequent in the West Indies, but I believe it is the first time I have seen it from Florida.

NOTE 479.—**Phlebia merismatoides**, sent by L. O. Overholts, Pennsylvania. I have heretofore always considered this a condition of Phlebia radiata, and this collection I took at first as an undeveloped form. The spores (subglobose 6-7 with a large gutta) are of a different type from those of Phlebia radiata (2-3x6-7 cylindrical, elongated). We therefore think it best to refer it to a name that is established, although, of course, no one knows that the real difference between Phlebia merismatoides, and Phlebia radiata is a spore form. The hymenium is a different configuration which could be shown better by a photograph than explained. The hymenium folds are similar to those of Phlebia Kriegeriana, named by Hennings in Europe, but that has a cylindrical spore, similar to Phlebia radiata. Heretofore Phlebia merismatoides has been to me more a tradition than anything definite. Greville's figure, which Fries refers here, shows globose spores, but we know that his microscopic work done with the earlier instruments cannot be relied on for accuracy. Still it is very doubtful if this is the European plant.

NOTE 480.—**Fungus** undeterminable. A curious fungus from Brazil. I have received from Gustavo Peckolt, Brazil, a specimen with the following interesting notes:

"I send you, under No. 25, a very interesting 'coquinello,' which we call here 'Isca de terra.' This fungus was gathered in the virgin forest at an altitude of 400 meters above sea level in the wooded country called 'Trapicheiro,' which is connected with the 'Tijuca' (Organ Mountains). It is found growing on the surface of granite, in vertical direction so as to start above the surface of the ground, being attached to the stone like an ant-hill or a wasp's nest. It appears at first sight to be simply a piece of granite, especially by its coloration, which mingles with that of the stone. When the granite has gray stripes or has a light green color (on account of the mosses) at the edge, then the coloration of the fungus is the same. Occasionally it is white or yellowish, and when it is attached to the trunk of living trees, it almost has the appearance of a piece of granite which has become encrusted in the trunk. Sometimes when the roots of the tree are visible above ground, the fungus will envelop them. I have small stems of plants 8 cm. thick, which are encircled by such fungi. The whole is about 30 cm. long and 8-10 cm. thick. I have specimens 20-30 cm. long and others perfectly rounded (globular)."

As there is no clue to the nature of the specimen, we sent it to Rev. Torrend, who is working with Brazilian fungi. It is unknown to him. We are advised that it has been referred in Europe to Polyporus colossus, but in our opinion there is no probability of it being a condition of this species, and we see no reason for such reference. The context is entirely different in color.

NOTE 481.—**Polyporus (Gan.) formosissimus**, from Rev. J. Rick, Brazil. We received this specimen originally as "formosissimus = renidens," and made a Note 90 under the

latter name. When we found, on comparison of spores, that it was not renidens, we referred it to Henningsii (Note 254) of Africa. We have just gotten another specimen and reviewed the subject, and concluded it cannot be the African plant. Of course, we do not know that it is formosissimus, but that is better than to call it a new species. In the sense of these specimens, it is a form of lucidus. To the eye it is lucidus excepting that the stem on both specimens forms sterile branches, which lucidus never does. This also seems to grow attached to buried wood, or perhaps from a rhizome, which is not a habit of lucidus. The spores are lucidus spores, excepting they are rougher.

NOTE 482.—**Stereum caperatum**, from Rev. J. Rick, Brazil. Stereum caperatum could just as well, perhaps better, be called Cladoderris caperata, but it is not Cladoderris infundibuliformis, as specimens are often named in the museums. The common Cladoderris in the American tropics is Cladoderris crassa, very distinct from this plant.

NOTE 483.—**Polyporus guaraniticus**, from Rev. J. Rick, Brazil. We have seen a few of Balansa's collections in the museums, but these are the first good specimens we have received. The species is close to brumalis, but with a smooth pileus and stem and minute white pores. The pilei are thinner and more cyathiform than brumalis. I consider Polyporus guaraniticus a good species.

NOTE 484.—**Daedalea subcoriacea**, from Rev. J. Rick, Brazil. Context color about taupe brown (Ridgway) with a violaceous tint. Hymenium daedaloid, pubescent under the microscope with dense, colored, projecting hyphae. Spores unknown. In texture and hymenial configuration this corresponds to Daedalea unicolor, but it is quite different in its dark context. It was collected in Nicaragua and distributed by Smith, misdetermined by Ellis as Irpex coriaceus. Named by Murrill as Irpex subcoriacea, the name was on this misdetermination. These two collections by Smith and Rick are all known, and neither has irpicoid hymenium, and no reason why it should have been called "Irpex." It is a Daedalea, if Daedalea unicolor is a Daedalea. Both would be better as daedaloid Polystictus.

NOTE 485.—**Cordyceps sphaecocephala**, from A. H. Ritchie, Jamaica. Compare Myc. Notes, p. 544. An additional, fine collection. Most of the specimens have a single club, a few have two clubs each. Owing to Mr. Ritchie's liberality in sending the species, there are more specimens now, I believe, in our collections than I saw in all the museums of Europe.

NOTE 486.—**Polyporus semilaccatus**, from John A. Stevenson, Porto Rico. This is the first specimen I have seen from the American tropics, although it is frequent in the East. In my pamphlet I took the ground that it does not occur in the American tropics. Mr. Stevenson's collection was made on railroad ties. It may have been introduced.

NOTE 487.—**"Isaria" Barberi**, from John A. Stevenson, Porto Rico. Cfr. Mycological Notes, page 546. There has never been any evidence and there is little probability of its being a state of Cordyceps. Massee's account of "Cordyceps Barberi" was chiefly a fairy story, and his illustration was made up to fit.

NOTE 488.—**Polystictus polyzonus**, from John A. Stevenson, Porto Rico. A thin, fulvous, tropical form of Polystictus velutinus for me. The American form has smaller pores than the Eastern form, but I do not think it practical to keep them distinct.

NOTE 489.—**Fomes fulvo-umbrinus**, from Rev. Torrend, Brazil. The original, and all heretofore seen by me, are resupinate, hence Poria fulvo-umbrina in Saccardo. This specimen, however, is pileate, subungulate. It is our only Fomes of orange context, in American tropics, with pale spores.

NOTE 490.—**Favolus tessellatus**, from Rev. Torrend, Brazil. Although Montagne described this plant as "fuscus," I am satisfied it is a white species when fresh. In the museums, however, I noted many specimens of a reddish plant so named. Montagne first referred the plant to Favolus brasiliensis, but afterwards corrected it.

NOTE 491.—**Polyporus terebrans**, from Rev. Torrend, Brazil. We are not sure this is the same as the poor type at Kew, but prefer to take the name to proposing a new one. In coloration (white context and adustus pores) it corresponds to Polyporus fumosus; in very hard texture, to Polyporus holmiensis, which we hold as a form of fumosus (cfr. Apus Polyporus, page 208). But in spores (globose, 4 mic.) it is different from either. Not much can be told from the type which is scanty and doubtful. In our pamphlet we referred Polyporus terebrans as a doubtful synonym for fumosus. This is a fine specimen and will (for us) fix the name definitely.

NOTE 492.—**Polyporus pallido-sporus**, from Rev. Torrend, Brazil. Fleshy, mesopodial. Surface dark, smooth. Stipe round, firm, dark when dry (but not Melanopus section). Pores apparently medium when fresh, probably white, agglutinate when dry. Spores abundant, pale colored under the glass, subhyaline, varying much as to size, largest 10-12, smooth, apiculate. Also abundant, small, 4 mic. globose, smooth, pale, spores no doubt conidial.

Not much of a description can be drawn up from a dried specimen of a fleshy plant that has changed much, no doubt, in drying. Notwithstanding the pale colored spores, I would put it in Ovinus Section 39. Heretofore, all Ovinus have had white spores, and, of course, a "new genus" might be made for this. Father Torrend compares the plant to P. leucomelas in general appearance, but the spores are not similar.

NOTE 493.—**Polyporus semilaccatus**, from J. Umemura, Japan. This seems quite a frequent species in the East. We have eleven collections frcm the Philippines, one from Ceylon, and four from Japan. The context color varies some. It is isabelline in all the Philippine collections, and in one from Japan (Yoshinaga, No. 1). It is much paler in the Ceylon collection (Petch) and three of the Japanese (Yasuda, No. 40; Umemura, No. 145 and 162).

NOTE 494.—**Craterellus dubius**, from J. Umemura, Japan. This is a rare plant in the United States, and these the first specimens I have gotten from any source. Professor Peck never met it but once. Excepting as to form it corresponds with common Craterellus Cornucopioides.

NOTE 495.—**Polyporus amygdalinus**, from J. Umemura, Japan. My first impression when I received this specimen was that it was very peculiar and distinct from anything I had ever seen. It is remarkable for its very light weight. The context, which is soft and light and fibrillose, is pale, rosy color, and heterogeneous, or of entirely different texture from that of the pores. We note this kind of context in several plants. It could be likened to compressed cotton of fine texture, and brings to my mind the idea of the word "punky." (There is a lot of "punk" in mycology, however, that does not belong here.) Patouillard had a glimmering of it when he proposed "Spongipellis," but lost the idea in the name. Murrill took Patouillard's name, but never grasped the idea at all, and included specimens of a directly contrary nature. Fries seemed to have had the idea in mind in the definition of Trametes in Novae Symbolae "contextus, floccosus intertextus," though it was a change from the original definition of Trametes "pores not heterogeneous from the context." Several species of "Trametes," notably Trametes lactinea of the East, and Trametes suaveolens on our willows have this "punky" context, and are still included in Trametes, though contrary to the original description.

Polyporus amygdalinus is a very rare plant in the United States, and the types at Kew being very poor, it was really not known to me until recently on the receipt of a good specimen from Dr. R. P. Burke, Alabama (cfr. Note 331). We have since gotten it from L. O. Overholts, Alabama, and Roy Latham, New York. The context, when freshly dried, is pale yellow (Salmon buff cfr. Note 331), though the context of same specimens have now taken on the pale pinkish cast, exactly the same color as in the Japanese specimens. Mr. Umemura writes that "the color of the young, fresh plant is beautifully orange."

NOTE 496.—**Hydnum amicum (Hydnum vellereum)**, from J. Umemura, Japan. This is our first collection from Japan. It is quite frequent in the United States and Southern Europe, but was not known to Fries. The Japanese plant is more obese and with a smoother surface than our American plant, but surely is the same species. It was named Hydnum olidum by Berkeley, from a Japanese specimen.

NOTE 497.—**Hydnum auriscalpium**, from J. Umemura, Japan. This is not a rare species in United States and Europe, but this is the first time I have received it from Japan. There is no mistaking this little species from its shape, an auriscalp, as named, and its peculiar habitat, always growing on a pine cone. The plant is well figured in "Illustrations of Japanese Fungi," plate 12.

NOTE 498.—**Polyporus umbellatus**, from A. Yasuda, Japan. This is a sclerotium, sent as Polyporus Chuling. It is the same as a rare plant in Europe and the United States (cfr. Letter 58, Note 277, Stipitate Polyporoids, page 150, fig. 450). The plant was illustrated in the Japanese Botanical Magazine, Vol. 19, Plate 4, as Polyporus Chuling, but both the figure and the sclerotium are the same as our rare species. The occurrence of Polyporus umbellatus in Japan is of special interest.

NOTE 499.—**Polyporus stipticus and related species.** The white species with reddish tendency are puzzling. I have just gone over and compared the specimens in the museum and I think we have four species.

Polyporus stipticus (Apus Polyporus, page 321), which dries with the pores discolored. Spores, 1½ x 3-4.

Polyporus anceps. With a reddish surface, but dries hard, and the context and pores are permanently white. Spores 3 x 5-6. I have four collections of this, all from the West. It is reported by Long as "the main heart-rotting fungus found in our Western yellow pine."

We are glad to definitely locate a name for this species, for it has been an enigma for some time. We did not consider anceps, for that species was described as white, and our impression of the cotype at New York was a white plant. This has a reddish tendency in drying. Mr. Weir suggests the name, and in looking up the original description I do not question that it refers to this plant. An illustration of the plant and the peculiar rot caused by it will shortly be published in Mycological Notes.

Polyporus cerifluus. Of this I have but one collection (Weir 176 which I compared at Kew). It is thin compared to others and occurs on frondose wood. Spores allantoid, 1 x 5.

Polyporus crispellus. This also is a thin plant, but grows on pine. The pores decolor, and the spores are abundant, 3½ x 5-6. I have but one collection (Weir 182). I have an idea this is the same as P. destructor of Europe.

NOTE 500.—**Die Blätterpilze.** There has recently been completed in Germany a publication with colored illustrations of the German agarics, under the title "Die Blätterpilze," by Adalbert Ricken. It contains most every common agaric of Europe and appears to me to be about as good a set of illustrations as has appeared. The work is issued in fifteen parts, and sold at three marks, or 75 cents, each. It can be purchased from Oswald Weigel, Leipzig. Those who are working on the agarics will find it very useful in determining our own species, for agarics, like all fungi, are practically the same throughout the world.

NOTE 501.—**Polyporus stereoides.** In reference to this plant, we reproduce herewith a quotation from a letter recently received from Mr. Romell:

"Of course, I do not forbid anyone to interpret Polyporus stereoides of Fries as he finds best, and I fairly concede that the specimen so labeled by Elias Fries himself and illustration so named in his Icones do really belong to his Trametes mollis (Polyporus cervinus of Persoon). I had noticed this fact long ago and even told it to the late Prof. Th. M. Fries before it was published. I also concede that this fact seems to afford a very strong evidence for the correctness of the opinion that Polyporus stereoides Fr. be identical with Polyporus cervinus,

Pers. Nevertheless I must refuse to accept said specimen and said illustration as the original Polyporus stereoides Fr., which has minute pores (see Obs. 2:258 and Syst. myc. 1:369). This original plant may possibly prove to be discolored specimens of Polyp. abietinus, just as the saved and illustrated specimen has proved to be Pol. cervinus. Under such circumstances, if we will save the name Polyporus stereoides Fr., we must decide to accept the specimen in Fries' herbarium so labeled by Dr. Robert Fries, presumably on the authority of his father, as a representation for this name. This is the only way I can see, if we do not prefer to delete the Friesian name Polyp. stereoides."

We think Mr. Romell's last suggestion is the best, to delete the name Polyporus stereoides. How can we use a name and attribute it to Fries, when Fries' specimen and illustrations contradict it? What is the use of the crowd of men, who have busied themselves in discovering as new species everything they do not know, if one cannot use their names in the rare cases when the plants need names owing to the vagueness of the older namers? For these reasons we prefer to call the plant Polyporus planus, which is a sure name for it, even if it was proposed on a guess.

NOTE 502.—**Stereum turgidum.** This was named through pure carelessness on my part, as Stereum caperatum. As I used the latter name in my Stipitate Stereum pamphlet, and it is a species well known to me, had I employed any, I should not have employed the same name a second time. The original Stereum caperatum passes in our literature as Thelephora, but it is a Stereum, or perhaps a better Cladoderris.

NOTE 503.—**Fomes fomentarius.** Berkeley in the Flora New Zealand, states of Fomes igniarius. "It is not generally known that the spores of P. igniarius are white, distinct from P. fomentarius with ferruginous spores." Berkeley had igniarius right, but his "fomentarius" was applanatus, or rather leucophaeus of the present day. It is curious that a man could go through life discovering thousands of "new species" and never learn the identity of such a common "old species" as Fomes fomentarius. In their latest books the English mycologists have never corrected this old mistake of Berkeley's.

NOTE 504.—**Cudonia convoluta.** In our Geoglossaceae, we based two species, Cudonia convoluta and Cudonia orientalis, on a collection from Professor A. Yasuda, Japan (No. 209). Professor Yasuda sends us another collection (380) which he assures us is the same species, and states that the previous specimens were imperfect. As I compare the three collections, it does not seem to me they are the same, but Professor Yasuda, observing the plant fresh is in the better position to know. I should consider No. 380 as an obese form of Cudonia circinans, and if No. 209 is the same, I think they are all forms of Cudonia circinans. The asci I make about the same (120 mic.) as Cudonia circinans and other details and color are the same.

ADDENDUM.

The following specimens have been received since the pamphlet was sent to the printer:

BONANSEA, DR. SILVIO, Mexico:

Xylaria Schweinitzii, additional fine collection (Will be published in Mycological Notes).

BROWN, GEORGE, New Zealand:

Secotium erythrocephalum (Will be published in Mycological Notes).—Aseroe rubra (Will be published in Mycological Notes).—Paurocotylis pila.—Geaster saccatus.—Fomes Robinsoniae.—Catastoma magnum (Will be published in Mycological Notes).—Cyathus Colensoi.—Geaster tenuipes.—Scleroderma columnare (Will be published in Mycological Notes).

DAVIS, S., Massachusetts:

Hydnum adustum.—Polystictus Montagnei.—Polyporus stipticus.

HADLEY, A. M., Vermont:

Stereum tuberculosum.—Fomes nigricans.—Hydnum caput ursi.—Polyporus adustus.—Phlebia radiata.—Lentinus strigosus.—Polystictus versicolor.—Hydnum coralloides.—Panus stipticus.

HIBBARD, MISS ANN, Massachusetts:

Polystictus abietinus.—Cyathus striatus.—Polystictus conchifer.—Geoglossum glutinosum.—Geoglossum glabrum.—Helvella crispa.—Geoglossum

luteum.—Lachnea hemisphaerica.—Thelephora anthrocephala.—Helvella albipes.—Otidea Onotica.—Geoglossum Farlowii (First time received by me).

HUMPHREYS, C. J., WISCONSIN:

Polyporus osseus.—Fomes robustus.—Fomes conchatus.—Polyporus glomeratus.—Polystictus cinnabarinus.—Aleurodiscus Oakesii.—Stereum tuberculosum.—Merulius molluscus.—Polystictus pubescens.—Polyporus fuscus.—Poria fulvida.?—Irpex lacteus.—Polyporus (Gan.) lucidus.—Poria subiculosa (Rare species, will be published in Mycological Notes).

KRIEGER, L. C. C., California:

Lysurus Mokusin (Will be published as a note).

LEEPER, BURT, Ohio:

Specimens were accompanied with fine photographs.

Tremellodon gelatinosum.—Polyporus delectans.—Trametes sepium.—Polyporus adustus.—Merulius incarnatus.—Stereum fasciatum.

SMALL, JOHN K., New York:

A nice lot of specimens collected in extreme southern Florida. All are plants of tropical America and two of them (marked *) are the first collection I have received from the United States.

Polystictus sanguineus.—Trametes hynoides.—Polystictus pinsitus.—Hexagona variegata.*—Polyporus sulphureus.—Hirneola polytricha.—Lenzites striata.—Fomes australis.—Fomes pseudosenex?* (Will be published as a note).

STOCKER, DR. S. M., Minnesota:

Polyporus fuscus.—Polyporus pubescens.—Polystictus versicolor.—Polystictus abietinus.

WHETSTONE, MRS. M. S., Minnesota:

Guepinia spathulata.—Thelephora flabellaris (Will be published in Mycological Notes).—Cyathus striatus.—Tubulina fragiformis.—Stereum spadiceum.—Polyporus gilvus.—Favolus microporus.—Hydnum compactum.—Tremellodendron candidum (Will be published in Mycological Notes).—Scleroderma Cepa.—Polystictus Macounii.—Thelephora palmata.—Polyporus albellus.—Polystictus perennis.—Polyporus Spraguei.—Hypomyces viridis.—Cyathus vernicosus.—Polyporus trabeus.—Polyporus rutilans.—Polyporus melanopus.—Thelephora terrestris.—Polyporus semisupinus.—Stereum diaphanum.—Daldinia concentrica.—Daedalea confragosa.—Xylaria hypoxylon.—Thelephora multifida.—Polystictus hirsutulus.—Reticularia Lycoperdon.—Polystictus hirsutus.—Thelephora cuticularis.—Polystictus versicolor.—Polystictus aurantiacus.—Stemonitis fusca.—Geaster rufescens.—Cantharellus floccopus.—Entoloma graveolens.—Boletinus castanellus.—Peziza macropus.

ZIMM, L. A., New York:

Polyporus dichrous.—Polyporus pubescens.—Irpex cinnamomeus.—Poria (or Irpex) tulipifera.—Irpex lacteus.—Polystictus perennis.—Lycogala Epidendrum.—Polyporus radiatus.—Polyporus albellus.—Polyporus brumalis.

LETTER No. 64.

By C. G. LLOYD.

May, 1917 - - - - Cincinnati, Ohio.

SOME LOST XYLARIAS.

I trust our correspondents will look out for Xylarias, particularly those who are fortunate in residing in the South and Southwest United States and in tropical countries. A number of our Xylarias are known only from very old collections or not known at all.

Fig. 985.

XYLARIA MUCRONATA (Fig. 985) illustrated by Schweinitz is only known from the figure. There is no specimen in his collection. Schweinitz states that he sent the only specimen that he preserved to Schwaegrichen. It may some day turn up in Germany. Schweinitz collected it in Carolina on Liriodendron roots.

XYLARIA GEOGLOSSUM (Fig. 986).—We think no plant agreeing with Schweinitz' figure will ever be found. In fact we believe it is a bull. The figure is an evident Xylaria but the specimen in Schweinitz' herbarium is a Geoglossum with no resemblance to the figure.

Fig. 986.

XYLARIA CUDONIA. There are but two specimens known (Fig. 987) which were collected in South Carolina, and are at Kew. Berkeley called it a Xylaria, but it does not look to me like a Xylaria at all. It is not cut open. If it were, I think it will prove to be a Camillea. To be sure Cooke shows a figure of a section (Fig. 988) which is typically a Xylaria. Berkeley called it a Xylaria, and Cooke knew how a Xylaria looked inside, so there was no trouble for him to draw a picture of it though he never saw the inside of it. If you will compare his drawing (Fig. 988) with the type (Fig. 987) you will note how accurate Cooke's imaginary pictures are.

Fig. 987.

Fig. 988.

Fig. 989.

XYLARIA FULVELLA, (Fig. 989).—A single specimen from Peters, Alabama, represents all known of this. It was described as "rubiginose." Spores 22 mic. long. It is hardly a species as long as known for such scanty material.

XYLARIA TITAN.—The type, all known, from Texas, is a half specimen at Kew. It is large, 6 inches tall and was originally about 2 inches thick. There are no spore records, but I judge it is same plant as Léveillé named from the West Indies Xylaria Poitei, changed in Saccardo to Xylaria Poiteani, and Cooke named Xylaria regalis from India. The Texan specimen is evidently of a tropical type, and I believe all three of these large, obese, tropical Xylarias will prove to be the same. I can note no difference in my photographs. I present a figure of the type of Xylaria Poitei which will probably prove to be same as Xylaria Titan.

Fig. 990.

Xylaria Poitei.

COLLECT YOUR DISEASED FUNGI.

I am well convinced that I fail to receive a number of interesting specimens, because my correspondents take them to be diseased and of no value. Most of these diseased fungi are caused by parasitic species belonging to the genus Hypomyces or Hypocrea and the parasite in its mature condition is the most interesting part. Hypomyces usually transforms the host into a distorted or deformed growth, so the original fungus is hardly recognizable. Hypocreas are more saprophytic in their nature and form fleshy cushions on the dead host. We present a photograph, Fig. 991, of Hypocrea fungicola, that we found growing on a dead Polyporus in Sweden. Both of these genera pass through two stages. First, a conidial stage when it is a powdery mass. No doubt you have often noticed the Boleti covered with a yellow powder. In this stage we do not particularly wish specimens for we can not identify them. The latter stage however,

Fig. 991.

where the fungus is transformed into a distorted mass (Hypomyces) or when the Hypocreas form cushions or fleshy bodies on the surface, are the conditions specially desired. Often they are collected immature, the spores not formed, so that the older you get them the better they are. They are characterized chiefly by their color, and by the shapes and sizes of the spores. All that is necessary is simply to dry them. It is a waste of effort to send them in preservatives.

XYLARIA CUDONIA.

We count that day lost that does not add something to our knowledge of the classification of fungi. Less than a week ago when we sent Xylaria cudonia (page 1) to the printer, we thought it was probably a Camillea. We have since worked over a collection of specimens from T. Hunter, Gold Coast, Africa, and find a plant of same external appearance as "Xylaria" cudonia. It proved to be Kretzchmaria angolensis as classified by Cooke and so compiled in Saccardo. But its internal (or external either for that matter) appearance has no relation to Kretzchmaria. It is a true Daldinia in structure. Perhaps "Xylaria" cudonia is a Daldinia, and perhaps it is the same plant as the African plant. If our Southern collectors, Prof. Beardslee, C. H. Baker, Dr. R. P. Burke, George L. Fisher, N. L. T. Nelson, Mrs. M. A. Noble, F. A. Wolf, will watch out and collect the Xylarias and similar plants I am sure a number of puzzles of years standing will be solved.

PEZIZAS.

We are not in a position to name Pezizas, but we are glad to get them, particularly the larger species. It is a simple matter to pick them up and dry them and mail them in.

The same applies also to Helvellas, Geoglossums, and the larger Discomycetes in general. While we may never study these families, the specimens will be preserved and will be available for those who specialize on them. At the present time Mr. Seaver, of New York, is paying particular attention to this group of plants and our specimens will all be submitted to him. There has never been any critical work done with American Pezizas. In England they have a very good text book, Phillip's, but as yet we have nothing in this country. The main work on the American Pezizas has been by Cooke, and that's saying enough. Mr. Seaver promises in time to get up a text book on the subject, and we hope he will be able to carry his plans through.

PLANTS FROM THE TROPICS.

The temperate region fungi are fairly well worked out, that is the section in which we are working, but there are many many things yet to be learned about the tropical and foreign species. We get perhaps more foreign specimens every month than Fries got during his life, and still we are not satisfied. As we write we have more packages than we can work over in a month, and still we are not satisfied. There is not a man, who receives this circular marked, that cannot take his basket and go to the "bush" and get enough specimens in an hour to keep me busy for a week. It is so simple to collect fungi. All one has to do is to go to the wild places where rotting wood is lying around and there can be found on the logs and growing in the ground numbers of fungi such as we illustrate in the publications sent you. You can make permanent additions to the general knowledge by simply picking up and sending in such as you note. And due credit will be given to you for anything of special interest you may send. The specimens will be preserved, not only for our own study, but for those who come after us. You can aid in this work very easily, and attach your name permanently to the mycological history of your own country. In collecting fungi, all you have to do is to pick them up, dry them (for otherwise they will spoil), put them in a pasteboard box and send them in. It is better to wrap them in thin paper, but that is all the protection they need, unless they are very fragile. Parcel post rates are cheap, and from most foreign countries they can be sent by parcel post direct to me. If not, they can be sent to my English address, and will reach me in time.

C. G. LLOYD,
224 West Court Street,
Cincinnati, Ohio.

C. G. LLOYD,
No. 95 Cole Park Road,
Twickenham, England.

Letter No. 65.

Report of specimens received since last published letter. My best thanks are extended to those who have favored me with specimens.

There is some delay in reporting on specimens received, due to the large number received and to other demands on my time. At the present writing there are several packages that have not been worked with. I have packages from Dr. Cleland and Dr. Stoward, Australia; W. G. Barker, New Zealand; John A. Stevenson, Porto Rico; M. R. Espinosa, Chile; and Rev. Torrend, Brazil.

In my printed letter I do not give authorities for names, believing that the binomial should represent a plant name, but in acknowledging the specimens to my correspondents, I give the "authority" in event they desire to use the same. All the specimens are acknowledged by personal letter as soon as they come into my hands. Foreign correspondents may send specimens to my English address and they will reach me promptly, although in countries which have direct parcel post arrangements with the United States, it is best to send them by parcel post direct to me. Specimens may be sent to either of the following addresses:

C. G. LLOYD,
224 West Court Street,
Cincinnati, Ohio.

C. G. LLOYD,
95 Cole Park Road,
Twickenham, England.

Cincinnati, Ohio, March, 1917.

J. Adams, Canada:—Cyathus vernicosus.—Cyathus striatus.—Bovistella pedicelata.—Lycoperdon umbrinum.

F. H. Ames, New York:—Poria punctata.—Irpex pachylon.—Coniophora puteanum.—Trametes serialis.—Fomes igniarius.—Hydnum adustum.—Xylaria polymorphum.—Odontia himantia.—Irpex cinnamomeus.—Exidia glandulosa.—Tremella mesenterica.—Dacryomyces aurantia.—Polystictus abietinus.—Trametes cervinus.—Fomes pinicola.—Polyporus fuscus.—Polyporus rutilans.—Stereum (Hym.) tabacinum.—Stereum (Hym.) Curtisii.—Pleurotus nidulans.—Porothelium fimbriatum.—Polyporus malicolus.—Bulgaria rufa.—Stereum rugosum.—Hydnum friabile. (See Note 510.)

W. A. Archer, New Mexico:—Catastoma Brandegeii. (See Note 511.)—Tylostoma poculatum.—Geaster rufescens.

Chas. H. Baker, Florida:—Polystictus arenicola. (Published in Mycological Notes, page 651.)

W. H. Ballou, New York:—Polyporus glomeratus. (See Note 512.)—Phlebia radiata?—Polyporus salignis.

E. Bartholomew, Nebraska:—Geaster Schmidelii.

P. Van Der Bijl, South Africa:—Hexagona speciosa. (See Note 513.)—Trametes devexa.—Polystictus luteo-olivaceus?—Polystictus occidentalis.—Daedalea Eatone.—Fomes senex.—Auricularia (or Hirneola) auricula-Judae.—Cladoderris spongiosa.—Polyporus dichrous.—Polyporus conchoids.—Polyporus (Gan.) mastoporus.— Auricularia squamosa. (See Note 514.)—Fomes pseudosenex.—Polystictus obstinatus.—Lentinus Sajor caju?—Stereum australe.

Dr. Silvio J. Bonansea, Mexico:—Clathrus crispus.

George Brown, New Zealand:—Crucibulum vulgare.—Urnula campylospora.

S. H. Burnham, New York:—Poria inermis.—Trametes piceinus.—Polyporus giganteus.—Calocera cornea.—Porothelium fimbriatum.—Dacryomyces chrysocomus.—Dacryomyces deliquescens.—Fomes fraxinophillus.—Lycoperdon nigrescens. Thelephora Americana.—Thelephora cuticularis.—Stereum spadiceum.—Poria versipora.—Hydnum albonigrum.—Scleroderma Cepa.—Polystictus biformis.—Tremella lutescens.—Poria spissa—Fomes salicinus.—Irpex cinnamomeus.—Gyrocephalus rufus.—Polyporus paluster. (See Note 515.)—"Tremella" mycetophila. (Will be published in Mycological Notes.)—Dacryomyces confluens.

J. B. Cleland, Australia:—Irpex consors. (Published in Mycological Notes, page 625.)—Tremella lutescens.—Tremella frondosa.—Hydnum repandum.—Stereum (Hym.) adustum.—Stereum vellereum.—Polyporus ochroleucus.—Tremella fuciformis.—Calocera glossoides.—Fomes hemitephrus. (See Note 516.)—Polyporus caesius.—Leotia marcida.—Seismosarca hydrophora. (Published in Mycological Notes, page 629.)—Polyporus mollis.—Polyporus virgatus.—Daldinia concentrica.—Polystictus versicolor.—Auricularia delicata.—Polyporus licnoides.—Polyporus subfulvus.—Polyporus rosettus.—Polystictus hirsutus.—Polyporus rigidus.—Guepinia spathularia.—Poronia oedipes.—Nummularia Baileyi.—Polyporus scruposus.—Hydnum aurantiacum?—Polyporus pubertatis. (See Note 517.)—Stereum hirsutum?—Trametes lilacino-gilvus.—Xylaria Myosurus?—Ustulina vulgaris.—Polyporus varius.—Geaster minimus.—Lycoperdon pusillum.—Calvatia lilacina.—Fomes Tepperii.—Urnula campylospora. (Will be published in Mycological Notes.)—Poronia punctata.—Geoglossum glabrum.—Polyporus cuticularis.—Fomes robustus.—Hydnum Muelleri.—Lentinus ursinus.—Polystictus flabelliformis.—Polystictus Persoonii.—Tylostoma poculatum.—Xylaria Hypoxylon?—Fomes rimosus.—Stereum zonarium. (Will be published in Mycological Notes.)—Xylaria tuberiformis. (Will be published in Mycological Notes.)—Hypomyces aurantiacum.—Lentinus strigosus.—Pleurotus griseus.—Polystictus bruneo-leucus. (Will be published in Mycological Notes.)—Polyporus grammocephalus.—Polystictus meleagris.—Polystictus xanthopus.—Trametes strigata.—Lenzites striata.—Colus hirudinosus? (Will be published in Mycological Notes.)—Xylaria phosphorea?—Polyporus megaloporus. (Will be published in Mycological Notes.)—Lentinus fasciatus.—Pseudocolus Rothae. (Will be published in Mycological Notes.)—Sarcoxylon Le Rati. (Will be published in Mycological Notes.)—Guepinia pezizaeformis. (Will be published in Mycological Notes.)—Laschia Staudtii. (Published in Mycological Notes, page 645.)

Mrs. Joseph Clemens, Texas:—Trametes hispida.

D. L. Crawford, California:—Polysaccum pisocarpium.—Lycoperdon pseudopusillum.—Rhizopogon provincialis.—Sparassis crispus.—Geaster Smithii.—Lycoperdon pusillum.—Merulius irpicinus.—Geaster minimus.—Tylostoma mammosum. (See Note 518.)—Lycogala Epidendrum.—Geaster hygrometricus.—Scleroderma Cepa.—Calvatia lilacina, var. occidentalis.—Catastoma levispora. (Will be published in Mycological Notes.)—Catastoma pila.—Lycoperdon gemmatum.—Catastoma circumscissum.

S. Davis, Massachusetts:—Geoglossum luteum.—Dacryomyces aurantia.—Gyromitra Friesii.—Peziza atrovinosa.

John B. Dearness, Canada:—Calvatia cretacea. (From the Arctic regions. Published in Mycological Notes, page 650.)—Xylaria filiformis. (Fine fruiting specimens. Will be published in Mycological notes.)

Miss A. V. Duthie, South Africa:—Schizophyllum commune. On timbers in a mine 100 feet below the ground, but little changed by its location.—Mycenastrum Corium.—Arachnion giganteum. (Published in Mycological Notes, page 645.)—Hexagona dermatiphora?—Tubulina cylindrica.—Cyathus vernicosus.—Fomes conchatus.—Calvatia lilacina.—Catastoma Zeyheri. (See Note 519.)—Odontia cinnabarina.—Polyporus lucidus. (See Note 520.)

Dr. J. Dutra, South Brazil:—Auricularia mesenterica.

Geo. L. Fisher, Texas:—Lenzites saepiaria.—Septobasidium castaneum.—Lycoperdon spadiceum.—Stereum lobatum.—Pleurotus nidulans.—Pleurotus sapidus.—Flammula sapinea.—Hypholoma epixanthum.—Hydnangium Ravenelii.—Polystictus sanguineus.—Geaster rufescens.—Lycoperdon cruciatum.—Lycoperdon Wrightii.

M. Gono, Japan:—Polyporus lucidus.—Polystictus versicolor.—Irpex Noharae.—Trametes Dickinsii. (See Note 521.)—Polystictus abietinus.—Polyporus adustus.—Lenzites subferruginea.—Polyporus caesius.—Polyporus undosus.—Polyporus trabeus.

D. B. Griffin, Vermont:—Polyporus caesius.—Polyporus radiatus.—Polyporus brumalis.—Polystictus perennis.—Polystictus hirsutus.—Hypoxylon cohaerens.

Henri Guillemin, France:—Stereum multizonatum.

H. Hill, New Zealand:—Polysaccum pisocarpium.—Polystictus cinnabarinus.—Polyporus dichrous.—Cordyceps Robertsii. A fine collection. (See Note 522.)

Miss Kate A. Jones, New Hampshire:—Hydnum adustum.—Schizophyllum commune.—Polyporus albellus.—Lenzites saepiaria. Polyporus lucidus.—Cantharellus floccopus.—Daedalea unicolor.—Polystictus pergamenus.—Polystictus versicolor.—Polystictus cinnabarinus.—Scleroderma aurantium.—Fomes leucophaeus.—Polystictus perennis.

Shiv Ram Kashyap, India:—Geaster hygrometricus.—Lenzites subferruginea.—Polystictus corrugatus. (See Note 523.)—Geaster lageniformis.—Hydnum rufescens.—Polystictus versicolor. Hydnum olidum. (See Note 524.)—Sarcoscypha macropus.—Cyathus stercorea.—Bovistella bovistoides. Helvella Fargesii. (See Note 525.)—Stereum (Hym.) tenuissimum.—Polyporus cinnamomeus, var. Lahorensis. (See Note 526.) Geoglossum glambum.—Helvella crispa.—Cantharellus cibarius.

Dr. C. H. Kauffman.—Plants collected in mountains of Kentucky and Tennessee. A few in Michigan.—Polyporus Berkeleyii. (On tree trunks.)—Polyporus semisupinus.—Polyporus albellus.—Polyporus Peckianus.—Irpex farinacea.—Polystictus haedinus.—Polystictus velutinus.—Polyporus malicolus.—Poria sulphurellus.—Poria pulchella.—Poria vitellina. Polyporus alutaceus. (See Note 527.)—Polyporus Polyporus adustus.—Poria undata.—Polyporus fragilis.

Ernest Knaebel, District of Columbia:—Merulius incarnatus.—Polystictus hirsutulus.—Stereum fasciatum.—Polystictus pergamenus.—Reticularia Lycoperdon.—Lenzites corrugata.—Daedalea confragosa.—Polystictus cinnabarinus.—Daldinia concentrica.—Hypoxylon Howeana.—Stereum (Hym.) Curtisii.—Fomes robustus. (See Note 528.)

Roy Latham, New York:—Polyporus sulphureus.—Cyclomyces Greenii.—Polystictus cinnamomeus.—Panus levis. (Will be published in Mycological Notes.)

J. E. A. Lewis, Japan:—Polystictus abietinus.—Lenzites saepiaria.—Polystictus versicolor.—Polyporus semilaccatus.—Lycoperdon pusillum.—Hydnum Rawakense.

(See Note 529.)—Irpex Noharae.—Naucoria pediades.—Lentinus strigosus.—Polystictus sanguineus.—Thelephora papillosa. (See Note 530.)—Lenzites betulina.—Polysaccum pisocarpium.—Polyporus volvatus. (Will be published in Mycological Notes.)—Calvatia Gardneri,—Stereum elegans. (Will be published in Mycological Notes.)—Favolus europaeus. (Will be published in Mycological Notes.)—Polyporus Mollerianus. (Will be published in Mycological Notes.)—Isaria. (Will be published in Mycological Notes.)—Trametes purpurea. (See Note 531.)

W. B. McDougal, Illinois:—Lycoperdon cruciatum.

Frank T. McFarland, Kentucky:—Polyporus rhipidium. (See Note 532.)—Stereum insolitum. (Will be published in Mycological Notes.)—Polyporus gilvus.—Mitremyces cinnabarinus.—Thelephora albido-brunnea.—Hypoxylon fuscum.

E. B. Mains, Indiana:—Tylostoma campestris.—Hydnum strigosum—Trametes sepium.—Polyporus Berkeleyi.—Polystictus Montagnei.

Geo. L. Moxley, California:—Schizophyllum commune.

Mrs. M. A. Noble, Florida:—Polyporus sulphureus.—Trametes lactea.—Polystictus conchifer.—Polyporus pubescens.

L. O. Overholts, New York:—Polyporus glomeratus.

L. O. Overholts, Pennsylvania:—Polystictus pubescens.

C. E. Owens, Oregon:—Irpex Owensii.—Hymenochaete sporeta.—Poria ferruginosa.

S. M. Stocker, Minnesota:—Polyporus fuscus.—Polyporus adustus.

Rev. C. Torrend, Brazil:—Fomes lignosus.—Polyporus cubensis.—Polyporus grammocephalus.—Polyporus supinus.—Polyporus stereinus.—Polystictus rigens.—Polystictus stereoides. (Will be published in Mycological Notes.)—Trametes Feei.—Fomes melanoporus. (See Note 534.)

J. Van Breda De Haan, Java:—Polystictus sanguineus.—Polystictus flavus.—Polyporus rubidus.

J. R. Weir, Montana:—Trametes piceana. (See note 535.)—Trametes pergamena. (See Note 536.)—Fomes gilvus. (See Note 537.)—Polystictus biformis.—Polyporus adustus.—Poria rufa.—Polystictus perennis.—Poria (or Fomes) cylindrispora. (See Note 538.)—Polyporus anceps. (Will be published in Mycological Notes.)—Polyporus versicolor.—Polyporus lucidus. (Abnormal.) (Will be published in Mycological Notes.)

James Wilson, Australia:—Fomes robustus.—Polystictus oblectans.—Thelephora terrestris.—Hydnum melaleucum.—Polyporus rudis.—Trametes lilacinogilvus.—Spumaria alba.—Hexagona Gunnii. (See Note 540.)—Strobilomyces pallescens. (Will be published in Mycological Notes.)—Fomes annularis.—Cladoderris spongiosa. (See Note 541.)—Favolus squamiger. (Will be published in Mycological Notes.)

A. Yasuda, Japan:—Cantharellus pallidus. (Will be published in Mycological Notes.)—Hymenochaete (Veluticeps) medicum. (See Note 542.)—Polystictus formosae. (Published in Mycological Notes, page 632.)—Fomes robustus.—Fomes subungulatus.—Entonaema lignescens?—Trametes heteropora—Cantharellus minor.—Daedalea ungulata.—Polystictus subaffinis.—Poria callosa.—Poria xylina. (Published in Mycological Notes, page 630.)—Irpex iyoensis. (Published in Mycological Notes, page 633.)

T. Yoshinagam, Japan:—The following specimens were credited, through error on our part, to K. Miabe, in Letter No. 63. —Polystictus unicolor? (This is a very puzzling collection. I think it is a Polystictus form of Daedalea unicolor, but it is the first time I have seen it.)—Polyporus semilaccatus.—Lenzites Berkeleyi.—Polystictus pellucidus.—Daedalea Kusanoi.—Trametes lactinea.—Lenzites striata.—Irpex consors.—Polystictus elongatus.—Polyporus dichrous.—Irpex Noharae. (Published in Mycological Notes, page 601.)—Xylaria polymorpha.—Lenzites subferruginea.—Schizophyllum commune.—Polyporus lucidus.—Polystictus sulcifer.—Daedalea gibbosa.—Polystictus polyzonus.—Polystictus subaffinis.—Trametes hetermorpha.—Polyporus sulphureus.

NOTE 505.—A careless mistake on my part was made in attributing specimens sent by David Griffiths, in Letter No. 62, to Washington, D. C. They came from Bellingham, State of Washington. This explains what seemed strange to me in the distribution of some of the plants. It is needless to say that the Note 436, commenting on the occurrence of Poria Weirii in our Eastern States would not have been written if I had known they came from the Northwest.

NOTE 506.—**Isaria flabelliformis.** In a letter from Father Rick, he writes me as follows: "Isaria flabelliformis is as Fries states, the conidial state of Xylaira corniformis. It was to me a great labor, but I observed the continuation of the same plant through to the Xylaria state." This is directly contrary to my published views, and to the observation in this country. I hope Father Rick will favor me with the plant in the various stages so we can confirm the above. That Isaria flabelliformis is any condition of Xylaria corniformis is difficult for me to believe. (Compare Myc. Notes, p. 547 and Note 44.)

NOTE 507.—**Trametes malicola.** I sent Rev. Bourdot specimens of Trametes malicola. In return, he sends me specimens from Europe which he found on an apple. In his opinion (and mine) the European and American species are the same. I also believe that Trametes flavescens, recently named in Europe on pine, is the same plant.

NOTE 508.—**Lentinus Guaraniticus.** When I was in Cuba, the most abundant Lentinus I found was a plant very close to Lentinus strigosus, and I doubt if the knowledge of them gained from dried specimens only, would justify one in holding them as distinct. I am very familiar with Lentinus strigosus as it grows abundantly with us, and I could see that the Cuban plant was not the same thing, though the differences are only a question of degree. Both have the purplish color when young and growing, which disappears in drying and when they get old. The Cuban plant was more purplish than our temperate region plant. Both have short, strigose hairs, particularly along the margin, but in the Cuban plant they are less developed, and the surface of the pileus is much smoother. But the most marked difference I noted is that the tropical plant is more fleshy, more putrescent, and in wet weather gets soft and decays in situ. That never happens to our temperate region plant. The two plants are very close, but there is a difference. As to name, the tropical plant was called Panus Guaraniticus by Spegazzini, but why "Panus" I do not understand.

NOTE 509.—The reference of Van Romburghia silvestris as a possible synonym for Laschia caespitosa in Myc. Notes, No. 46, was a careless piece of work on my part, due to inattention to the numbering of the figures. It is Polyporus bataviensis (Plate XI, Fig. 4) that appears from the figure to be Laschia caespitosa and Holterman's text does not indicate otherwise. I should be more careful and not make such breaks as that, but I am glad I found it before some one else did, and will mark that paragraph "delete" before the pamphlet is distributed. Van Romburghia both from the figure and the text appears to be Phlebophora as named by Leveille, a genus unknown to me, and which Patouillard refers to Craterellus. It certainly has no resemblance to Laschia caespitosa. Saccardo refers it to Phlebophora Solmsiana, but Hennings and Holtermann's figures do not look at all alike to me.

NOTE 510.—**Hydnum friabile,** from F. H. Ames, New York. I believe this is the first time I ever received this plant, and it is so similar to the common Hydnum pulcherrimum, that I have gone through my specimens to see if I had overlooked it. I have 35 collections on the shelf, and not one among them that can be referred to friabile.

Fries gave Hydnum friabile a good name, and the feature that impressed me at once, that it could not be our common species was the light, friable, brittle, context. This is of the same nature as the flesh of Polyporus sulphureus. The microscope shows the tissue to be of interwoven, branched, hyaline, **hollow** hyphae, branching and interlacing in all directions. In Hydnum pulcherrimum the hyphae are smaller and arranged in bundles, parallel and fibrillose. There are other differences. The surface of this specimen would indicate that the tomentum is detersive. The teeth are paler color, and as pointed out by Fries, are connivent at the apices. Hydnum friabile was one of the few plants sent to Fries by Curtis. He published it in Novae Symbolae, 1851, and the specimen is still at Upsala. I believe this specimen from Mr. Ames is the first collection since.

NOTE 511.—**Catastoma Brandegeii,** from W. A. Archer, New Mexico. This is an unpublished species, first received 1905 from T. S. Brandegee, Caliacan, Mexico, and then from P. B. Kennedy, Reno, Nevada. It is characterized by the bright yellow, smooth spores. It will be published in a revision of the genus Catastoma on which I am now working.

NOTE 512.—**Polyporus glomeratus,** from W. H. Ballou, New York City. Finely developed pileate specimen, the first I have ever seen. It is a rare plant and when collected it has always been in a subresupinate form. It was among the first species that Peck named, but for thirty years was only known from little fragments of the original collection. It always grows on the maple, and the pileate plants have the general appearance of Polyporus gilvus. It is readi

recognized, not only by its peculiar microscopic structure such as no other native species of Polyporus has, but by its greenish yellow pore tissue. I have gotten it before from A. P. Morgan (cfr. Note 292), Dr. Kauffman (cfr. Note 204), and C. J. Humphrey, but Mr. Ballou's sending is the only well developed collection I have. Mr. Ballou found it on a maple log, extending for many feet along the log.

NOTE 513.—**Hexagona speciosa,** from P. Van der Bijl, South Africa. This is really a "lost species" that came from South Africa seventy years ago. Compare Synopsis Hexagona, page 21, fig. 299. The plant has large pores, brown context and surface, and zonate surface with appressed fibrils. It is quite close to Hexagona Pobequini, which is more abundant in Africa, and which can be distinguished by its velutinate pores. There are minute scattered points on the pores of Hexagona speciosa, but the pores are not velutinate. Some time ago we received this same species from Mr. Van der Bijl, a specimen so thin that we did not consider it Hexagona speciosa, and referred it to Hexagona niam-niamensis. On comparison, it is surely a thin specimen of this same species. We are glad to get rid of "niam-niamensis." Cfr. Note 457, which should be deleted.

NOTE 514.—**Auricularia squamosa,** from P. Van der Bijl, South Africa. Same as Auricularia Emini of Hennings. I do not know which was "prior," as both were published the same year (1893), but I use Patouillard's name as it is the best name for it. It is only known from Africa.

NOTE 515.—**Polyporus paluster,** from S. H. Burnham, New York. In our Apus Polyporus we referred to this plant incidentally on page 383, but did not include it in the body of the book, as it was doubtful to us. Mr. Burnham's fine collection locates it definitely. Polyporus paluster is a pure white plant and dries white. The surface is rather smooth, the flesh hard, and the spores about 3x10, are cylindrical, mostly pointed at both ends. It grows on pine and is quite close to Polyporus albidus (on Abies) in Europe, but differs as noted above, and chiefly in its larger spores. We are very glad indeed to locate definitely another species in this puzzling white apus section.

NOTE 516.—**Fomes hemitephrus,** from J. B. Cleland, Australia. I think Miss Wakefield is right about this and that I was in error in my Fomes pamphlet. Hemitephrus was named from New Zealand. It is always characterized by an orange coloration under the crust, a feature I did not note when I was at Kew. My account of Fomes martius in my Fomes pamphlet was based on this plant. I can not tell from the little frustule of Fomes martius from Brazil I have, how it differs from hemitephrus, but hope some of my Brazilian correspondents will send in a specimen so that we can get a correct idea of it. Note 130 is in error (probably) cfr. also note 300.

NOTE 517.—**Polyporus pubertatis,** from J. B. Cleland, Australia. This species was named from Japan (cfr. Apus Polyporus, page 358), and the Australian plant is exactly the same on comparison. The spores are very pale colored as noted in the description and appear almost hyaline under a glass. Their abundance, however, point to their belonging to the "colored section," and Dr. Cleland notes "spores faintly brown." It is gratifying to have this plant come to us from Australia, only heretofore known from the "type locality," Japan.

NOTE 518.—**Tylostoma mammosum,** from D. L. Crawford, California. In my pamphlet I called this Tylostoma simulans, but species received since convince me it is too close to the European species. It is the most common species in Europe. It is rare with us.

NOTE 519.—**Catastoma Zeyheri,** from Miss A. V. Duthie, South Africa. The type of this species is at Kew, named in mss. by Berkeley. It was collected in South Africa, probably fifty years ago, and published as Bovista thirty years ago. This is the first specimen that has reached me, and the first collected since. It is quite close, if not the same, as Catastoma hyalothrix of Australia.

NOTE 520.—**Polyporus lucidus,** from Miss A. V. Duthie, South Africa. These are the distorted and abortive stems that grew in a mine 100 feet below the surface of the ground. We naturally expect them, under these conditions, to take these abortive and bizzarre forms, but what is curious is that they are slender and correspond to the stems of Polyporus lucidus as it grows in Europe. The only form of Polyporus lucidus, growing normally, that we know from South Africa, called (Note 459) Polyporus capensis, has short, thick stems or is subsessile. That it should develop slender stems of the European type when developed under abnormal conditions, in a mine, is strange. There is but one fruiting specimen in the collection and this is a Ptychogaster, or conidial condition, I think the first observed in connection with Polyporus lucidus.

NOTE 521.—**Trametes Dickinsii,** from M. Gono, Japan. This species was named from Japan by Berkeley, and it seems fairly frequent. I have now eight collections, all from Japan, and do not know it from any other country. As to texture, it is hard like Trametes Bulliardii, which is the trametes form of Daedalea confragosa, but Trametes Dickinsii is always trametoid, never daedaloid. The character of the species is its color, both context and surface. To my eye it is about cinnamon buff of Ridgway.

NOTE 522.—**Cordyceps Robertsii,** from H. Hill, New Zealand. Mr. Hill sent me a very fine lot of specimens, which reached me in good condition. I have gotten specimens before from George Brown, J. T. Paul, and G. H. Adcock, all from New Zealand, and there are now in the museum more specimens than at Kew or the British Museum. Cordyceps Robertsii is a fine species and has only been collected in New Zealand. Up to the present time it is unknown from Tasmania or Australia.

NOTE 523.—**Polystictus corrugatus,** from Prof. Ram. Kashyap, India. This is for me only the small pored form of Polystictus Persoonii, same exactly as to context, texture, etc. It is probable that Polyporus platypilus (cfr. Letter No. 36) is the same thing.

NOTE 524.—**Hydnum olidum,** from Prof. Shiv Ram. Kashyap, India. Fifty years ago Berkeley named this from Japan, and I believe this is the first collection made since. This belongs to the section of the genus with tough fibrous texture and hyaline, tubercular spores. The surface is radiate striate, and the plant is close to Hydnum cyathiforme of Europe. The original specimen was mesopodial as are some of this collection, but others of the collection

are pleuropodial, and if it were not so evident that they are the same, we would take them for different species. Had the pleuropodial specimens been sent separate and alone, they would undoubtedly have been a "new species." The color of the dried specimen is dark brown (almost black) as are the spines, but another collection (No. 4), which is surely same species, has dried orange brown. When received they were exceedingly fragrant.

NOTE 525.—**Helvella Fargesii,** from Prof. Shiv Ram. Kashyap, India. I judge from description only (from China), though, of course, doubtful. It is not European, I think, but close to Helvella Ephippium, though differing in contrast of dark pileus and pale stipe.

NOTE 526.—**Polystictus cinnamomeus, var. Laborensis,** from Prof. Shiv Ram. Kashyap, India. This is color texture, and general stature, the same as Polystictus cinnamomeus of Europe and the United States. It differs in its shape, deeply infundibuliform. The usual plant has a slight tendency that way, though often convex. The spores are 4x6, smaller than our American plant. We have already commented on the tendency of Polystictus cinnamomeus in the East to have more globose spores than our American plant (cfr. Stip. Polyporoids, page 164). In this connection, the common Polystictus oblectans in Australia is only a form of Polystictus cinnamomeus (cfr. Note 351).

NOTE 527.—**Polyporus alutaceus,** from Dr. C. H. Kauffman, Michigan. My spore record is too small for this species. It should be 4x5 mic.

NOTE 528.—**Fomes robustus,** from Ernest Knaebel, District of Columbia. We gave a full account of this plant in our Fomes pamphlet (page 242). It has been generally confused with Fomes igniarius, and in France to this day passes as Fomes igniarius. We know it in this country from the West, but this is the first specimen we have gotten from an Eastern station. This is the form with concolorous surface called Fomes Bakeri.

NOTE 529.—**Hydnum Rawakense,** from J. E. A. Lewis, Japan. There is some difference in plants so referred from various countries, and a close comparison might show essential differences. This collection has typical metuloids on the spines and the spores are globos, minutely rough. Hydnum helvolum (Note 410) is quite close but more fleshy.

NOTE 530.—**Thelephora papillosa,** from J. E. A. Lewis, Japan (cfr. Note 222, Letter 54, figure page 8). These specimens are pleuropodial, and the plant is probably one of these variable species as to manner of growth. As additional specimens are received we doubt if practical to maintain more than one species of Thelephora with permanent, papillate hymenium, which occurs only in Japan. Thelephora Paponica, which was recently named (Myc. Notes, page 597), probably belongs here.

NOTE 531.—**Trametes purpurea,** from J. E. A. Lewis, Japan. This is a rare species known only from Japan, and this the third collection known. The type is at Kew and I have a previous collection from S. Kawamura. The species is not well named. The color of surface is to my eye about a vandyke brown. When old it gets darker and some of these specimens are almost black. The context is "punky" but firm, in color isabelline. The pores minute, round, rigid, hard, are darker than the context. There are no cystidia, and I find no spores.

NOTE 532.—**Polyporus Rhipidium,** from Frank T. McFarland, Kentucky. This is the type (Northern) form, as originally named by Berkeley, from plants from Lea, Cincinnati. It is a rare plant. I never found it, but Morgan did, and the only other collection I know is from R. H. Denniston, Madison, Wisconsin. The plants from Mr. McFarland are recently collected and are white, but they will in time turn red, which is a character of the species. The species was originally described as "yellowish," but that was no doubt from specimens that had partially changed in color. It is curious that this species, rare with us from its "type locality," takes a small form (Polyporus pusillus as named by Persoon) in the tropics, and is fairly common and widely distributed. We have collected it in Samoa and Florida, and have noted specimens from Australia, and many other countries, as stated on pages 22-24, Mycological Notes (Polyporus issue), where a full account and illustration of this curious species are given.

NOTE 533.—**Polyporus balsameus.** Mr. Overholts advises me the type has minute oblong or subreniform spores, 1½-2x3-4. I did not examine them. It can not therefore belong to the "pubescens-versicolor-velutinus" group, where I referred it, all of which have larger spores. (cfr. Myc. Notes, page 377.)

NOTE 534.—**Fomes melanoporus,** from Rev. C. Torrend, Brazil. This collection has paler colored context, and was received under the mss. name, Fomes cinereus. For me it is melanoporus with paler context. I get the same form from South Africa.

NOTE 535.—**Trametes piceina,** from James R. Weir, Montana. On Crataegus. This species is common on acerous wood, but unrecorded on frondose. Exactly same as acerous form (form with small pores). Spores globose, 5-6 mic. hyaline, transparent, often guttulate. Setae are rare, but large, and same as those on acerous wood (cfr. Syn. Fomes, page 277).

We received a letter from Mr. Weir, in which he takes the ground that Trametes piceina and Trametes abietina are simply variations of Fomes pini. He states that they are apparently Fomes with perennial strata and that they produce exactly the same rot as the type of Fomes pini. I do not doubt but that Mr. Weir is correct, but at the same time there is a variation in the general appearance of the hymenium of these forms. As a matter of convenience we believe it would be well to use the different names, with a mental reservation that they are really the same.

NOTE 536.—**Trametes pergamena,** from James R. Weir, Montana. A thick, trametoid form of Polystictus pergamenus. The Friesian system of genera for the large fungi is probably the best, but it is embarrassing when species assume forms that place them in two genera. The common Polystictus pergamenus of our Eastern States is our only polyporoid (excepting P. abietinus) that has violaceous pores. The Western form found on Populus trichocarpa by Mr. Weir, is a thick, rigid plant, but in other features context, large violaceous pores, etc., is the same species. It was recently named Polystictus subchartaceus.

NOTE 537.—**Fomes gilvus,** from James R. Weir, Montana. The indurated Fomes form of Polyporus gilvus. This appeared in my Apus Polyporus pamphlet as Polyporus inamoenus (page 348).

NOTE 538.—**Poria (or Fomes) cylindrispora,** from James R. Weir, Montana. Perennial, resupinate, ½ to 1 inch thick. Context ferruginous (about snuff brown Ridgway). Pores minute, with silvery glancing mouths. Pore layer narrow, 2-3 mm. wide. Setae abundant, slender, not inflated at base. Spores hyaline, cylindrical, 2½-3x6-7, smooth.

Mr. Weir finds this abundant on Quercus Garryana. To the eye it is same as the common Poria punctata (Poria obliqua of American traditions, not Europe), but no other known similar species has cylindrical spores.

NOTE 539.—**Pileate Merulius lacrymans.** Mr. James R. Weir has called our attention to a paragraph in Der Hausschwamm, by Carl Mez, as follows: "Kommen sie dagegen ous einer vertikalen Flache (z. B. einer Wand), so bilden sie sich meist mehr oder weniger deutlich huf- oder hutformig aus."

It is our impression that the German authors who have written a great deal on Merulius lacrymans stating that it only occurs on "domesticated" wood and is not found wild, call the same thing when they find it in the woods, by a different name, claiming it can not be the same species as grows on "domesticated" wood. We have never attached any importance to this view and Mr. Weir informs us that he has frequently found it in the virgin forests of Idaho far removed from any human habitation.

NOTE 540.—**Hexagona Gunnii,** from Rev. J. Wilson, Australia. The finest specimens I have ever gotten. I am beginning to be a little dubious about Hexagona olivacea which I proposed (Note 185). I think now it is better referred to Hexagona Gunnii. Additional specimens demonstrate that there is not the contrast in context color that I thought at the time.

NOTE 541.—**Cladoderris spongiosa,** from Rev. James Wilson, Australia. A fine specimen, such as rarely received. This species, originally from South Africa, is based on the broad, obtuse folds of the hymenium, but the character, like all characters of Cladoderris, is only relative. The upper surface is not so "spongy," due, I believe, to the condition of an old plant. There seem to be two species of Cladoderris in Australia, viz., spongiosa with broad folds and dendritica with narrow folds. Four are given in the Handbook, but Cladoderris australis is not a Cladoderris, and Cladoderris australica is Cladoderris spongiosa. Cladoderris spongiosa is very close to Stereum caperatum (Syn. Stip. Stereums, page 17) and has the same metuiloids, but is a thicker plant and has papillte (scanty in this specimen) on the hymenium. The spores are hyaline, elliptical, about 7x10, and the surface appears to me minutely rough. This is the first time we have gotten the species from Australia.

NOTE 542.—**Hymenochaete (Veluticeps) medicum,** from A. Yasuda, Japan. This is the only perennial Hymenochaete known to me. It is about 8 mm. thick, with narrow layers about a mm. It is not a true Hymenochaete, but belongs to Veluticeps as proposed by Cooke. In Hymenochaete the setae are near the surface, short, sharp, and quite distinct from the hyphae. In Veluticeps the setae are deeply seated, proceeding from the subhymenial tissue, and appear to be modified projecting hyphae. In addition, they are in this specimen mostly collected into bundles, like the original species called Stereum veluticeps from Cuba.

Hymenochaete medicum was originally from India and named by Currey at Kew. The setae of the type are more scattered, not so much in bundles, as in this specimen. It has also recently been found in the Philippines and named Veluticeps philippinensis, by Bresadola, and the setae are partly in bundles and partly scattered. The Japanese plant was sent under the name Hymenochaete japonica by Yasuda, and at first I was disposed to hold it a good species on account of the distinct bundles of the state, but on comparison, I think it is the same as the Indian species.

NOTE 543.—**Leotia Japonica.** In our pamphlet on the Geoglossaceae, we refer a collection (310) from Professor Yasuda, Japan, to Leotia atrovirens. We reproduce from letter of Professor Yasuda as follows

"The specimen under No. 310 of the previous sending may be Leotia japonica, Yasuda, a new species for me."

"Entire plant 5-7 cm. high, which is distinguished from Leotia atrovirens (only 1-1.5 cm. high) by the much greater size. Pileus light yellow with a slight tinge of green when fresh, not intensely green or deep green as in Leotia atrovirens or L. chlorocephala, but turned olivaceous green in drying, 1-1.5 cm. wide, larger than that of L. atrovirens (4-6 mm. wide). Stipe light yellow when fresh, not intensely green as in L. atrovirens, but turned green in drying, cylindrical, compressed, 4.5-6.5 cm. long, 3-4 mm. wide, slightly covered with small scales (not strongly squamulose as in L. atrovirens). Asci 130-150x7-8 mic. (150x15 mic. in L. atrovirens). Spores spindle shaped, 18-22x5-7 mic, arranged in an oblique row. Paraphyses branched, thickened above."

NOTE 544.—**Lysurus Mokusin,** from L. C. C. Krieger, of California. This specimen, sent in formalin is perfectly preserved. As in the dried specimen recently sent me (see figure, Mycological Notes, page 586), the volva has broken off and is carried up with the arms. I wonder if that is habitual with the species. Lysurus Mokusin is a native of China, and was the second foreign phalloid named. It has become established in the hot houses at Chico, California, and this is the second collection sent me by Mr. Krieger. An aritcle on the embryology of the species from eggs sent by Mr. Krieger was published in Mycological Notes, page 647.

NOTE 545.—M. Larz Romell, in a recent article, decides that the thick deposit of spores found in the surface of Polyporus lucidus and Fomes applanatus is due largely to mechanical reasons and explodes the theory that they are of conidial origin. We are of the belief that Mr. Romell is correct in his conclusions.

NOTE 546.—**Fomes pseudosenex?** We have referred with considerable doubt to this species, a very large specimen received from John K. Small, extreme southern Florida. It was sent us as Fomes dependens, and it may be that Fomes dependens is the same thing growing on under side of host. The species has very heavy, hard, brown context, globose, colored spores, and no setae. Fomes pseudosenex was misreferred for Ellis to Fomes senex, hence the name (cfr. Synopsis Fomes, page 255), for it has no resemblance to Fomes senex. The specimen from Mr. Small is much larger than we have previously seen, and has wide, annual layers, about a cm., so there is doubt of it being the same as those heretofore known, which were small plants with narrow layers.

NOTE 547.—**Tremellodendron candidum,** from Mrs. M. S. Whetstone, Minnesota. In sense of Schweinitz, viz., with a bad odor. For me probably a condition of Tremellodendron pallidum. In the description given by Schweinitz, "odor nauseous" was evidently a feature of his "species," but in Burt's account no reference is made of it whatever.

In sense of Burt, viz., with branches more free, while extreme forms are quite different in appearance, there are so many intermediate specimens that I have never found it practical to separate the species on this feature.

NOTE 548.—**Hydnum pulcherrimum and Hydnum septentrionale.** These two species are very similar when dried, and I find, on going over my specimens, that I have sometimes referred the latter to the former. They can be distinguished, however, under the microscope. Hydnum septentrionale has large, thick metuloids on the teeth, absent from Hydnum pulcherrimum. I think both have "Cystidia," but they are more strongly developed in septentrionale. I hope none of the name jugglers will ever find it out, for it would be most unfortunate to have a lot of "new genera" proposed in the Hydnums on such characters as distinguish "Lopharia," "Thwaitesiella," "Lloydella," etc. There is enough trouble with Hydnums now, with such fellows as Banker, who bases his juggling on the old ruse of "priority," and who changes his names every time he writes a paper. It is to be hoped there will never be any of the "hair expert" juggles of the von Hoehnel type at work on "Hydnums."

NOTE 549.—**Lycoperdon albinum.** This appeared in Myc. Notes, page 582, in error as Lycoperdon albidum.

NOTE 550.—In Mycological Notes, No. 42, we published a photograph of a specimen that was sent to us as a fungus with which we were unfamiliar, and asked for suggestions regarding its nature. We received from Professor Patouillard a letter suggesting that it was a portion of a white ant's nest, and we then wrote to Professor Petch, of Ceylon, who we knew was familiar with the white ant's nests from his section. We have since received a letter from Dr. J. van Breda de Haan, of Java, who suggests that it is a white ant's nest, and Professor Petch recently advised us to the same effect. We are, therefore, glad to have a solution of this fungus (?) mystery.

NOTE 551.—**Diploderma radicatum.** A slip was made in printing Diploderma Castoreum for Diploderma radicatum, Myc. Notes, page 642. Of course, we had no intention of changing the specific name when it was the generic name that was in fault. It is strange how we can overlook an obvious slip like this a dozen times in reading the proof, and then notice it the first time we look over it after it is printed and too late to correct.

NOTE 552.—**More worries for Luke McLuke.** Professor Burt gravely informs us as to Pistillaria Thaxteri that "the primordium of the Pileus in its ontogeny in more highly developed species is not simpler." If anyone else had said it I would not have believed it.

NOTE 553.—**Polystictus pellucidus.. Correction.** I find I have been making a mistake in my determinations of this species from Japan. They should have been referred to Polystictus abietinus. The Japanese plant is thinner and paler than our common American plant, but on comparison and section I find evidently the same species. It has hyaline capitate cystidia. I have a little frustule of the type of Polystictus pellucidus from Java. While very similar, the cystidia are different. They are hyaline, but more like metuloids. The relation of the Japanese and American plant was first suggested to me by Professor Yasuda.

In this connection, Irpex Noharae (Myc. Notes, p. 601), is very close also to Polystictus abietinus, notwithstanding the vast hymenial difference. It has the same cystidia, and I doubt not but that it is a hymenial variant of it, but it does not occur in the United States. I am not sure it is correctly referred to Irpex Noharae.

ADDENDUM.

The following specimens were received, or were studied, while the preceding copy was in the printer's hands.

W. E. Barker, New Zealand:—Geaster floriformis.—Geaster triplex.—Scleroderma flavidum.—Mycenastrum Corium.—Crucibulum vulgare.—Secotium erythrocephalum.—Paurocotylis pila.—Lycoperdon pratense.—Fomes senex.—Calvatia lilacina.—Stereum Leichkardtianum?—Polystictus hirsutus.—Aseroe rubra.—Anthurus aseroeformis.—Polystictus ochraceus.

Rev. A. Boulton, West Virginia:—Polyporus giganteus.—Daedalea ambigua.—Daedalea confragosa.—Stereum complicatum.—Schizophyllum commune.—Panus stipticus.—Fomes applanatus.—Polyporus fuscus.—Polystictus versicolor.—Polystictus hirsutus.—Polyporus gilvus.—Irpex lacteus.—Polystictus cinnabarinus.—Polystictus pergamenus.—Lenzites betulina.

Dr. J. B. Cleland, Australia:—Lenzites saepiaria.—Geaster simulans.—Geaster saccatus.—Geaster floriformis.—Fomes Robinsoniae.—Fomes Yucatensis.—Trametes lilacino-gilva.—Calocera cornea.—Guepinia pezizaeformis.—Fomes ohiensis. (See Note 554.)—Irpex saepiaria. (Will be published in Mycological Notes.)—Polystictus eriophorus.—Polystictus ochraceus.—Lentinus dealbatus. (See Note 555.)—T· mella fimbriata.

Mrs. Joseph Clemens, Texas:—Psora crenata. (Will be published in Mycological Notes.)—Gyrophragmium Delilei. (See Note 556.)

W. Cradwick, Jamaica:—Lentinus Guaranitica.

C. W. Dodge, Missouri:—Clavaria striata.—Clavaria pyxidata.—Lycoperdon stellare.—Cyathus stercoreus.—Merulius tremellosus.—Lycoperdon pyriforme.—Lycoperdon gemmatum.

M. R. Espinosa, Chile:—Polyporus squamosus. (See Note 557.)—Polyporus giganteus.—Rhizopogon rubescens.—Xylaria concursa. (Will be published in Mycological Notes.)—Phlebia reflexa.—Polystictus zonatus.—Polyporus dichrous.—Polyporus adustus.—Polyporus betulinus.—Stereum hirsutus.—Xylaria gracilis. (Will be published in Mycological Notes.)—Lenzites betulina.—Fomes senex.—Fomes leucophaeus.—Stereum vellurum.—Calvatia pachyderma. (See Note 558.)—Calvatia lilacina.—Tylostoma subfuscum.—Polystictus tabacinus.—Lycoperdon gemmatum.—Lycoperdon polymorphum.—Stereum (or Hymenochaete) tenuissimum.—Merulius Corium.

Henry C. Gilbert, Oregon:—Stereum vellereum.—Stereum hirsutum.—Poria pereffusa.—Polyporus arcularius.—Polyporus caesius.—Poria ferruginea.—Radulum cuneatum.

Ernest Knaebel, District of Columbia:—Lenzites betulina.—Lenzites corrugata.—Daedalea confragosa.—Polyporus gilvus.—Daedalea quercina.—Polystictus versicolor.—Polystictus hirsutus.—Polyporus amorphus.—Polyporus robiniophilus.—Phlebia radiata.—Stereum (Hymenochaete) Curtisii.—Exidia recisa.—Favolus europaeus.—Stereum complicatum.

W. B. McDougal, Illinois:—Polyporus cuticularis.

Arthur S. Rhoads, New York—Trametes hexagoniformis.—Polyporus anceps.

J. A. Stevenson, Porto Rico:—Trametes cubensis.—Polyporus licnoides.—Polystictus rigens.—Fomes (Ganodermus) fasciatus.—Polyporus supinus.—Gibellula arachnophila.—Polystictus maximus.—Polystictus fulvocinereus (?)—Polyporus Tricholoma.—Fomes marmoratus.—Trametes hynoides.—Favolus Braziliensis.—Polystictus sanguineus.—Corticium lactescens.—Corticium portentosum.—Polyporus pusillus.—Xylaria Schweinitzii.—Xylaria scopiformis.—Xylaria apiculata.—Fomes lamaensis. (See Note 559.)—Polystictus Drummondii.—Polystictus membranaceus.—Trametes Taylori (?)—Trametes submurina.—Polyporus rigidus.—Polyporus subfulvus.—Polyporus anaebus.—Fomes badius.—Polyporus fulvellus.—Xylaria partita. (Will be published in Mycological Notes.)—Xylaria plebja.—Xylaria Berkeleyi.

Dr. F. Stoward, Western Australia:—Trametes Stowardii. (Will be published in Mycological Notes.)—Polyporus gilvus.—Polystictus cinnabarinus.—Polystictus sanguineus.—Stereum hirsutum.—Trametes lilacina-gilvus.—Bovista brunnea. (See Note 567.)

Rev. C. Torrend, Brazil:—Camillea globosa. (Will be published in Mycological Notes.)—Numularia discreta.—Polyporus dichrous.—Hexagona cuculiata.—Hydnochaete badia.—Fomes gilvus.—Fomes melanoporus.—Lentinus velutinus.—Geaster velutinus.—Corticium comedens?—Fomes ohiensis.—Calocera cornea.—Fomes marmoratus.—Polyporus modestus.—Cladoderris dendritica.—Polystictus multiformis.—Merulius Corium.—Polyporus terebrans.—Pterula multifida.—Irpex lacteus.—Polyporus licnoides.—Polyporus lucidus. (See Note 560.)—Trametes ozonioides.—Trametes Feei.—Daedalea steroides.—Cyathus Montagnei.—Stereum lobatum.—Stereum membranaceum.—Cyathus stercoreus.—Trametes versatilis.—Polystictus etaliformis.—Trametes praetervisa. (See Note 561.)—Hydnum Uleanum. (See

Note 562.)—Polyporus subfulvus.—Polyporus sublilacinus. (See Note 563.)—Fomes pseudosenex.—Polyporus adustus.—Physalacria inflata. (Will be published in Mycological Notes.)—Polyporus nivosus.—Trametes lactea.—Stereum (Hym.) Cacao.—Ptychogaster lucidus. (Will be published in Mycological Notes.)—Tremella fusca. (Will be published in Mycological Notes.)—Fomes rimosus.—Daedalea Sprucei. (See Note 564.)

Mrs. Susan Tucker, Washington:—Lactarius volemus.—Polyporus volvatus.—Geaster velutinus.—Cyathus vernicosus.—Trametes adustus. (Will be published in Mycological Notes.)—Lycoperdon stellare.

E. West, Pennsylvania:—Tremella mesenterica.

Professor A. Yasuda, Japan:—Polyporus floriformis.—Polystictus versatilis.—Ptychogaster Japonicus. (Will be published in Mycological Notes.)—Fomes olivaceus. (See Note 565.)—Auricularia (or Hirneola) auricula Judae.—Septobasidium Mompa (?)—Trametes ungulata. (See Note 566.)—Irpex Noharae.—Polystictus abietinus.—Polystictus phaeus. (Will be published in Mycological Notes.)—Stereum sendaiense. (Will be published in Mycological Notes.)—Fomes iyoensis.—Fomes melanoporus.—Mycobonia papyrina.—Merulius molluscus.—Polystictus Sequoiae.

NOTE 554.—**Fomes ohiensis, from J. B. Cleland, Australia.** There are two plants, only two plants, with same very peculiar spores (cfr. Apus Pol., p. 311). These are Polyporus ochroleucus of the East (Australia, Japan, Africa, Ceylon, India) and Fomes ohiensis of America. I have never before seen either overlap the others territory. I have from Dr. Cleland a single half specimen of Fomes ohiensis, and although the material is scanty, it authenticates the occurrence of Fomes ohiensis in Australia. It must be very rare there, although fairly frequent with us. When I was in New York lately, I saw specimens of what Murrill had referred from Florida to Fomes turbinatus, and apparently, from the description, correctly. It is only a Southern form, and not a good form even, of Fomes ohiensis.

NOTE 555.—**Lentinus dealbatus, from J. B. Cleland, Australia.** We name this from description, for, of course, there is no type known. It answers the description which was from Australia. The plant, as noted by Dr. Cleland (also Fries), has the gills violet when young. The plant is between Lentinus fasciatus and Lentinus strigosus, and on comparison it appears close to the latter.

NOTE 556.—**Gyrophragmium Delilei, from Mrs. Joseph Clements, Texas.** I have reached the conclusion that there is but one species of Gyrophragmium and that the main difference between the proposed species is geographical. It is known now from only four general localities and every station has a name for its "species." First collected by Delile at Montpelier, France, it is known now from several Mediterranean countries. This is called Gyrophagmium Delilei by Montagne. Next it reached Berkeley from South Africa, which he called Polyplocium inquinans. Some years later Berkeley got it from Texas and again discovered it was a "new species," this time in a different genus, and named it Secotium Texense. From the Pacific Coast, Harkness named it Polyplocium Californicum. Then Peck got it from the California coast and did not know its genus even, but discovered it was a "new species" and called it Secotium decipiens. And finally, as late as 1902, E. B. Copeland, who apparently did not know the first elements of fungus classification, gave a crude figure of it from California in a German periodical and called it Podaxon strobilaceus. It has about as much resemblance to a Podaxon as it has to a bunch of Garlic. Gyrophragmium Delilei is a sand-loving plant and is one of the few fungi that grow on the bare sand dunes of the lower Pacific Coast. It is not known from our Atlantic Coast, nor in Europe, excepting in the Mediterranean region.

NOTE 557.—**Polyporus squamosus, from Marcial R. Espinosa, Chile.** While this must be referred to the European species, as a form at least, it differs in several particulars. The general appearance of the plant, surface, scales, textures, spores, are the same, but the pores are more elongated and the stipe is not strongly black. We have similar pale stiped forms from Australia.

NOTE 558.—**Calvatia pachyderma, from Marcial R. Espinosa, Chile.** This is a rare species and we have but one previous collection from L. G. Yates, California. It is globose, with a thick, hard peridium, and resembles externally the common Mycenastrum Corium. The capillitia are short, tortuose, pale threads about 6 mic. in diameter. The spores, oval, pale, smooth, apiculate, 4 x 5 mic. It has a much earlier name, Mycenastrum fragile, as proposed by Léveillé for some fragments broken in little bits, collected by Gaudichaud at Montevideo and preserved in the museum at Paris. There are objections to using the old name: first, it is not Mycenastrum, and second, it is not "fragile." Saccardo has compiled it as Scleroderma fragile, which is worse still. Instead of being "fragile," it is one of the firmest and most rigid puff balls known. A cobblestone would probably have been named "fragile," had it been subjected to as hard usage as this old specimen had on its voyage around the world.

NOTE 559.—**Fomes lamaensis, sent by John A. Stevenson, Porto Rico.** The first time I have seen this species from the American tropics, although it is a frequent plant in the East. The specimen, however, has much darker context color, not "orange yellow," but brown.

The structure is peculiar (cfr. Fomes pamphlet, page 245 and figure 600), a little matter that was entirely overlooked by the author. It has always been a mystery to me why Berkeley never had this rather frequent species. I think he did, probably, but I never found it of his naming. Cooke had it, but referred it to Fomes marmoratus (sic).

NOTE 560.—**Polyporus lucidus, from Rev. C. Torrend, Brazil.** With the soft tissue eaten out. All of this group of plants have two kinds of tissue: hard, ligneous fibrils, and soft, more fleshy. Insects often eat the soft parts and leave the hard parts like a skeleton. In fact, Trametes (sic) Skeleton was named by Fries on just such a specimen, and it is about the only real bull I recall having noted in his work.

NOTE 561.—**Trametes praetervisa, from Rev. C. Torrend, Brazil.** As named by Father Torrend. I wish he would publish it, for I think it is very good. It is the only large-pored, rosy-flesh Trametes I have seen. He calls it praetervisa, as he states he has previously seen it from Australia.

NOTE 562.—**Hydnum Uleanum, from Rev. C. Torrend, Brazil.** Very similar to Hydnum pulcherrimum, same nature, a white plant that goes reddish in drying. It is thinner and spores are hyaline, globose 4-5 mic. instead of oblong 3 x 5, as in our plant. Otherwise plants are about the same. Henning's spore record, "7-8 brown," is all wrong.

NOTE 563.—**Polyporus subliliacinus, from Rev. C. Torrend, Brazil.** Compare Apus Polyporus, page 387. It is really gilvus, but there is a different appearance to the pores. But it is too close.

NOTE 564.—**Daedalea Sprucei, from Rev. C. Torrend, Brazil.** I have published, Note 49, a short reference to this plant. The hymenium is as variable as possible, as Lenzites, Daedalea, and Rev. Torrend sends this as Sistostrema. The old Persoonian idea for a genus Sistostrema for this class of plants with variable hymenium was really more natural than the Friesian idea of splitting it up into several genera. But Daedalea Sprucei is not a Daedalea in the Friesian idea. It has globose, colored spores and belongs to the genus Phaeodaedalea (McGinty). The plant, however, is surely same as Berkeley named.

NOTE 565.—**Fomes olivaceus, from Prof. A. Yasuda, Japan.** We have labeled a resupinate specimen as above, but we would not "describe" it, as it is probable the species is not normally resupinate. It is similar to Fomes melanoporus in having an exceptional and distinctive context color. The color shows best on the pore surface, and it is about our idea of olive, although on Ridgeway's plate it comes nearer isabelline than olive. At any rate it is the only Fomes I recall of a similar color.

NOTE 566.—**Trametes ungulata, from Prof. A. Yasuda, Japan.** As named by Professor Yasuda. This, as stated by the author, is surely only a hymenial variant of Daedalea ungulata (cfr. Myc. Notes, page 550), and both have same context color and are intimately connected with our common Lenzites saepiaria. Neither of these Japanese forms occurs with us.

NOTE 567.—**Bovista brunnea, from Dr. F. Steward, West Australia.** How strange is the distribution of fungi! Bovista brunnea is most rare, and is the only species that is known from Australasia. This is the eighth collection I have gotten, and, excepting the type at Kew, the known collections are in our museum. Four are from Australasia, and four from Italy and Tirol. The common species of Europe, Bovista plumbea and Bovista nigrescens, and of this country, Bovista pila, all appear to be absent from Australasia.

NOTE 568.—**Death of George Massee.** We are in receipt of advice by private letter from Kew of the death of Professor George Massee, which occurred on February 16th, after a short illness. We gave in Mycological Notes, No. 34, a portrait of Professor Massee and a short biographical notice. For many years he had charge of the mycological collection at Kew, and we were indebted to him for many courtesies during the months that we worked at Kew. It is a personal loss to learn of his death.

SECTIONS 15 AND 16 OF STIPITATE POLYPOROIDS.

When we wrote this pamphlet we were not clear as to the species of these two sections. They have been very much confused and are still confused. So many specimens have since been received that the species have mostly cleared, but the history is still confused, due to the vagueness and uncertainty of the old historical specimens in the museums of Europe on which the names are based. It has been some years since we worked over these specimens, and at that time we were not very familiar with the species. We believe now that the species are clear to our mind. If we could again work over these "type" specimens we could arrive at definite and final conclusions. According to our notes and photographs, the following summary is our present views. In order for convenient citation, we have numbered them as notes.

Section 15.

This section has been very much confused. They are unicolorous, rose colored species, or tending toward reddish brown.

NOTE 569.—**Polystictus Didrichsenii.** This is common in the East particularly in the Philippines. The surface has raised zones and the margin is thin. It is usually more or less conchoid. The pores while small are larger than the following species. There is much diversity in its naming. There is a cotype from Fries at Kew. Berkeley called it Polystictus Menziesii. Most specimens from Philippines are labeled Polystictus atypus attributed to Léveillé. It does not answer Léveillé's description and there is no type to be found at Leiden. The only specimens I have noted labeled by Léveillé are at Paris, and are Polyporus modestus of American tropics which is doubtfully different from the Eastern. Murrill further added the confusion by including in Polystictus atypus another species, Polyporus rubidus, which also common in the East but differs in being a thicker plant, with thick edges and noteworthy more minute pores.

NOTE 570.—**Polystictus modestus.** This plant of the American tropics is doubtfully the same as the previous plant of the East. Usually it is more even with smaller pores, but I have one collection from Rev. Torrend, Brazil, that I should have referred to Polystictus Didrichsenii, had I not known it came from the American tropics. It has had many names. It is modestus of Fries not Berkeley. It is albo-cervinus of Berkeley; brachypus for Murrill; leiodermus for Montagne; atypus for Léveillé as to American plants. The plant called leiodermus is so close to the previous from the East that I am inclined to think it the same.

Polystictus brachypus. I have one collection from Congo, which has been compared with type at Paris. It was named from the West Indies. Very similar to modestus, it is much thinner, not a mm. thick. It is quite rare. I have it also from Rev. Rick, Brazil. In sense of Murrill it is the previous plant, quite different from the type.

NOTE 571.—**Polyporus rubidus.** This is common in the East and confused by Murrill under the name atypus with Polystictus Didrichsenii. It always has minute pores, and is a much larger and thicker plant. It is a Polyporus rather than a Polystictus. Rarely I have seen a dark spot on top of pileus at base, as noted by Petch. We have it common from the Philippines, also from Java and Ceylon.

NOTE 572.—**Polyporus bruneolus.** According to my notes, bruneolus is quite different from what others take it. For me it is close to rubidus but with reddish brown color, more brown than rose, and a hard, smooth surface. I recently saw specimens from the Philippines, labeled Polyporus confundens, which for me is an entirely different plant.

NOTE 572.—**Polyporus rubritinctus** based on a single collection from the Philippines, is close to rubidus as to surface colors, but has thin context and paler pore tissue. It may be a good species, but it is hard to maintain a species "known only from type locality."

NOTE 574.—**Polystictus Clemensiae** is another "known only from type locality" species of the Philippines. It is similar to rubritinctus but very much paler color with only a faint tint of rose.

Section 16. Polystictus.

This section in Stipitate Polyporoids has never been satisfactory to me. It comprises the thin, rigid species with white or pale context and smooth or minutely pubescent surface with greyish zones. To Polystictus Gaudichaudii with medium large pores and Polystictus incurvus with long stipe I have nothing to add. Gallopavonis with minute pores and short stems could be split up into three names of species as follows:

NOTE 575.—**Polyporus gallopavonis** is between Polyporus and Polystictus, usually thick and rigid. Surface with greyish zones which become paler with age. This originally from Australia I found very abundant in Samoa. A somewhat thinner form is also frequent in Madagascar and tropical Africa. Hennings named it pseudo-cinerascens from New Guinea. Polyporus cinerescens of which no type is known, seems from description to be this plant although the pores are not "cinereous." It was changed to Polystictus Léveillei by Cooke, then changed back. Its thickness "not exceeding a cm." precludes it from being Polystictus murinus, as we have seen specimens labeled.

NOTE 576.—**Polystictus murinus.** This is marked with zones as the previous, but is a thinner and darker plant. There is a cotype at Kew and we take it in this sense. There is much confusion as to the identity of Polystictus murinus which confusion originated from Léveillé. His cotype at Kew is in sense of this article. The true type as cited "versicolor" is in box 158 at Leiden and is Blumei, an unzoned plant. The specimen in box 137 at Leiden which Bresadola took for the type is Polystictus bruneolus for me, a quite different reddish brown plant. Polystictus murinus was distributed in quantities from the Philippines named as above by Murrill which I think is correct. Bresadola mostly refers it to Polystictus meleagris which for me is the pale, unzoned or faintly zoned form of same thing. Léveillé described the substance as "pale cinnamon" but from old, discolored specimens. Fries refers murinus to bruneolus but it is not same for me. Cesati named it confundens but plant I saw at New York so determined from the Philippines, is for me bruneolus.

NOTE 577.—**Polystictus meleagris.** This is very close to the previous but is paler with faint or uncolored zones. I doubt if it can be always distinguished from the previous although in the Philippines there is an evident difference, and in Africa we refer to the same pale unicolorous specimens, the zones marked but not colored. It was named from Australia subzonalis by Cooke.

NOTE 578.—**Polystictus vittatus.** This is a thick plant, ½ to 1 cm., and is quite close to Polystictus gallopavonis, and similarly zoned. The zones are often much paler, however, and sometimes absent. We get it typically from Madagascar and South Africa, and doubtfully from Japan. It has been called Trametes, and it is a question if a better Trametes or Polystictus.

NOTE 579.—**Polystictus Thwaitesii.** This is a thin plant with the upper surface marked like the previous plants, but with large, rigid, trametoid pores. I know it only from Ceylon "type locality" specimens from T. Petch. I have misplaced my notes on this plant at Kew but it seems correct according to the description. Certainly it is not a "Fomes" as found in Saccardo.

NOTE 580.—**Polyporus cinerescens** (or, as Léveillé called it in pidgin Latin, cineresсens). **from W. Small, Uganda, Africa.** There has just come to hand, as we finish out this letter, a plant that answers to the description of Polyporus cinerescens named from Java in 1844. It is a thick plant on the order of gallopavonis, but surface is uniform dark-gray with rarely faintest indication of zones. We received the plant some years ago from Henri Perrier de la Bathie, Madagascar, but at that time could not place it. There has always been confusion as to Polyporus cinerescens. No type exists at Leiden or elsewhere. It has been given as a synonym for Polyporus incurvus, to which we demurred, as the latter plant has a long stipe and the description calls for a plant "stipite subnullo laterali." There is little doubt that the African plant is same as that of Java, though in cases like this there is always some doubt. But no one will ever know the difference if it is not.

LETTER No. 66.

Acknowledgment of specimens received since last report. My best thanks are extended to those who favored me with specimens. Some of the notes that will be illustrated with photographs will be published in future issues of Mycological Notes.

I wish to acknowledge the liberality with which specimens are being received from correspondents in foreign countries. Notwithstanding the precaricus conditions of ocean shipments a number have been received which I have not found time to study. Very few, if any, have been lost. As this copy is sent to the printer, there are on hand the following:

P. van der Bijl, South Africa, (3).
Dr. J. B. Cleland, Australia, (2).
Miss A. V. Duthie, South Africa, (2).
Dr. L. Maire, France, (1).
W. A. Scarfe, New Zealand, (1).
V. Demange, Hanoi, China, (5).
P. Hyac Vanderyst, Africa, (1).
E. D. Merrill, Philippines, a large shipment.
J. T. Paul, Australia, (1).

In my printed letter I do not give authority for names, believing that the binomial should represent a plant name, but in acknowledging the specimens to my correspondents, I give the "authority" in event they desire to use the same. All specimens are acknowledged by personal letter as soon as they come into my hands. Foreign correspondents may send specimens to my English address and they will reach me promptly, although in countries which have direct parcel post arrangements with the United States, it is best to send them by parcel post direct to me. Specimens may be sent to either of the following addresses:

C. G. LLOYD,
224 West Court Street,
Cincinnati, Ohio.

C. G. LLOYD,
95 Cole Park Road,
Twickenham, England.

Cincinnati, Ohio, October, 1917.

BAKER, C. H., Florida:
Polystictus sanguineus.

BALLOU, W. H., New York:
Polyporus giganteus.—Stereum fasciatum.—Polyporus rutilans.—Polystictus hirsutus.—Poria mutans.—Hydnum pulcherrimum.

BETHEL, E., New Mexico:
Myriostoma coliformis.—Geaster limbatus.—Geaster asper.—Tylostoma Purpusii.

BETHEL, E., Colorado:
Calvatia gigantea.

BEWLEY, ANNA K., Pennsylvania:
Xylaria polymorpha.

BIJL, P. VAN DER, South Africa:
Xylaria polymorpha.—Lentinus stuppeus.—Polyporus fragilis.—Polystictus versipora. (See Note 581.)—Poria versipora.—Polyporus scruposus.—Lentinus Sajor Caju.—Fomes senex.—Stereum hirsutum.—Polystictus luteo-olivaceous.—Polystictus phocinus.—Polyporus undatus.—Polyporus conchatus. (Published in Mycological Notes, page 700.)—Polyporus Goetzii (?). (See Note 582.)—Exidia purpureo-cinerea.—Lanopila Wahlbergii. (See Note 583.)—Fomes Yucatensis.—Stereum vellereum. (See Note 584.)—Polyporus trabeus.—Polyporus rusticus. (Will be published in Mycological Notes.)—Trametes subflava. (See Note 585.)

BOUTLOU, REV. A., West Virginia:
Naucoria scleroticola. (Will be published in Mycological Notes.)—Lycogala Epidendrum.—Poria versipora.—Merulius tremellosus.—Polystictus biformis.—Fomes rimosus.—Ustulina vulgaris.—Fomes (Ganodermus) leucophaeus.—Fomes (?) (Ganodermus) reniformis.—Polyporus albellus.—Polyporus caesius.—Trametes malicola.—Polyporus brumalis.—Hypoxylon fuscum.—Lycoperdon piriforme.—Pleurotus striatulus.—Poria undata.—Peziza coccinea.—Polyporus lucidus.—Xylaria Hypoxylon.—Fuligo septica.—Daldinia concentrica.—Hemitrichia rubiformis.—Daedalea quercina.—Lentinus strigosus.—Crucibulum vulgare.—Xylaria polymorpha.—Trichia varia.—Stemonitis fusca.—Xylaria Longiana. (See Note 586.)—Stereum frustulosum.—Xylaria subterranea. (?)—Exidia recisa.—Hirneola auricula-Judae.—Peziza scutellata.—Peziza badia.—Sclerotium. (Will be published in Mycological Notes.)—Craterellus Cantharellus.—Hormomyces aurantiacus. (Will be published in Mycological Notes.)

BRACE, L. J. K., Bahamas:
Polyporus Curtisii.—Schizophyllum commune.—Polystictus hirsutus.—Polyporus grammicola. (See Note 587.)—Camillea bomba.—Polyporus terebrans. (?)

CLEMENTS, MARY STRONG, Texas:
Coprinus ephemerus.—Tylostoma albicans.—Podaxon Farlowii.—Stropharia semiglobata.—Trametes hispida.—Montagnites Candollei.

CRAWFORD, D. L., California:
Geaster mammosus.—Gautiera morchelliformis. (See Note 588.)—Scleroderma Geaster.—Lycoperdon cruciatum.

DAVIS, SIMON, Massachusetts:
Polyporus osseus.—Polyporus floriformis.

DEARNESS, J., Canada:
Polyporus radiatus.

DEMETRIO, C. H., Missouri:
Irpex pachylon.—Merulius tremellosus.—Polyporus rutilans.—Hypocrea sulphurea. (See Note 589.)

DUTHIE, MISS A. V., South Africa:

Cyathus vernicosus.—Arachnion album.—Sclerederma Geaster.—Geaster saccatus.—Poronia punctata.—Guepinia spathulata.—Mollisia cinerea.—Trametes trabea. (Will be published in Mycological Notes.)—Anthurus MacOwanae. (See Note 590.)

ESPINOSA, M. R., Chile:

Xylaria scopiformis.—Polystictus fulvicolor.—Xylaria reniformis. (Will be published in Mycological Notes.)—Xerotus degener.—Cytospora chrysosperma.—Cyttaria Hariotii.—Coniophora luteo-cincta. (?)—Polystictus versicolor.—Bovistella aspera.—Stereum purpureum.—Stereum Beyrichii.—Stropharia semiglobata.—Polystictus tabacinus.—Schizophyllum commune.—Hypholoma appendiculata.—Scleroderma Cepa.—Xylaria albomaculata. (Will be published in Mycological Notes.)—Geaster fornicatus.—Stereum rigidulum.—Calvatia lilacina.—Polystictus cinnabarinus.—Bovista brunnea.—Nidula macrocarpa. (Will be published in Mycological Notes.)—Clavaria nigricans. (Will be published in Mycological Notes.)—Mycenastrum Corium.—Daldinia concentrica.—Merulius lacrymans.—Chlorosplenium aeruginosum.—Polyporus adustus.—Polyporus aureus. (See Note 591.)—Sepedonium chrysospermum.—Aleurodiscus vitellinus. (Will be published in Mycological Notes.)

EVANS, I. B. POLE, South Africa:

Geaster fornicatus.—Daedalea Eatoni.—Polystictus occidentalis.—Stereum affine.—Polystictus spadiceus.—Polysaccum crassipes.—Schizophyllum commune.—Trametes lactinea.—Fomes senex.—Scleroderma Cepa.—Polystictus azureus.—Lentinus Sajor Caju.—Lenzites guineensis.

FISHER, GEO. L., Texas:

Stereum fasciatum.—Lenzites saepiaria.—Lenzites rhabarbarina.—Lentinus strigosus.—Polystictus hirsutus.—Polystictus pergamenus.—Hypomyces Lactifluorum.—Lycoperdon fuscum.—Polyporus gilvus.—Poria xanthospora. (See Note 592.)

FITZPATRICK, H. M., New York:

Hymenochaete tabacinum.—Isaria byssoidea. (Will be published in Mycological Notes.)—Isaria flabelliformis.—Xylaria Cornu Damae.—Xylaria subterranea. (?)—Xylaria polymorphum.—Xylaria filiformis.

FLOCKTON, MISS MARGARET, Australia:

A collection of specimens sent in by Miss Flockton, in which she was assisted by her friends, F. L. T. Leichhardt, Mr. Lucas, Mrs. C. Dennis, P. F. Clarke, M. L. F. Chatswood, Mrs. Boulton, W. F. Blakeley, Miss Johnston, J. L. Boorman.

Scleroderma Cepa.—Polyporus (Amaurodermus) rugosus. (See Note 593.)—Polyporus Blanchetianus.—Fuligo septica.—Poronia oedipes.—Hexagona rigida.—Polystictus versicolor.—Lycogala Epidendrum.—Lycoperdon cepaeforme.—Polysaccum pisocarpium.—Geaster plicatus.—Lycoperdon cepaeforme, with shiny surface. (Will be published in Mycological Notes.)—Phlebia reflexa.—Polystictus xanthopus.—Trametes lactinea.—Stereum atropurpureum. (Will be published in Mycological Notes.)—Irpex versatilis. (Will be published in Mycological Notes.)—Fomes setulosus. (Will be published in Mycological Notes.)

GEE, N. GIST, China:

Cyathus stercoreus.—Calvatia lilacina.—Polystictus versicolor.—Polyporus lucidus.—Lysurus sinensis. (Will be published in Mycological Notes.—Phallus rugulosus. (See Note 644.)—Hirneola auricula-Judae.—Polystictus versatilis.—Polyporus adustus.—Polystictus sanguineus.—Schizophyllum commune.—Fomes applanatus.—Lenzites subferruginea.—Polystictus velutinus.—Cordyceps sinensis. (Will be published in Mycological Notes.)

GRIFFIN, D. B., Vermont:

Chlorosplenium aeruginosum.—Poria subiculosum.

HANMER, C. C., Connecticut:

Elaphomyces granulatus. These hypogeal fungi are rarely received by me, and this the only species of Elaphomyces I know from this country. They have a number of species in Europe, and no doubt we also have, if we could find them.

HILL, H., New Zealand:

Ophionectria Cordyceps. (Published in Mycological Notes, page 692.)—Polyporus dichrous.—Cordyceps Robertsii. Another fine collection. Cfr. Note 522.—Polysaccum pisocarpium.—Geaster saccatus.

HUNTER, T., Africa:

Polystictus sanguineus.—Polystictus gallopavonis.—Polystictus meleagris.—Hexagona speciosa.—Polystictus leoninus.—Polyporus durus.—Fomes malvenus. (See Note 594.)—Polystictus dialeptus. (Will be published in Mycological Notes.)—Trametes cingulatum.—Calvatia lilacina.—Polystictus flavus.—Fomes senex.—Hexagona tenuis.—Auricularia delicata. (See Note 595.)—Stereum Bolleanum. (See Note 596.)—Daldinia angolensis. (Published in Mycological Notes, page 688.)—Polyporus (Gan.) Curtisii. (See Note 597.)—Xylaria plebeja. (Published in Mycological Notes, page 687.)—Polyporus (Gan.) fulvellus.—Polystictus Persoonii.—Trametes versiformis. (See Note 598.)—Polyporus ostreiformis.—Polystictus caperatus.—Polystictus murinus.—Polystictus xanthopus.—Polyporus gilvus.—Fomes hornodermus. (See Note 599.)—Fomes oroflavus.—Lenzites repanda.—Fomes lamaensis.—Daldinia concentrica.—Hexagona crassipora. (Will be published in Mycological Notes.)—Stereum nitidulum.—Polyporus (Ganodermus) Mangiferae.—Polyporus (Gloeoporus) conchoides.—Polyporus (Gan.) capensis.—Polyporus vinosus.—Hirneola auricula-Judae.—Pyrenopolyporus Hunteri. (Will be published in Mycological Notes.)—Polyporus spadiceus.—Polystictus versatilis.—Polystictus Didrichsenii.—Xylaria polymorpha.—Trametes roseola.—Polystictus occidentalis.—Hexagona hirta.—Trametes heteropora.—Polyporus maliensis.—Fomes applanatus.—Daedalea Dregeana.—Polyporus lignosus.

KRIEGER, L. C. C., California:

Rhizopogon rubescens. (See Note 600.)—Lycoperdon cepaeforme.

LATHAM, ROY, New York:

Fomes annosus.—Xylaria corniformis.—Stereum sericeum.—Irpex lacteus.—Polystictus cinnabarinus.—Polystictus versicolor.—Polystictus hirsutus.—Naematelia nucleata.—Polyporus stipticus.

McDOUGALL, W. B., Illinois:
Xylaria Hypoxylon.

McFARLAND, F. T., Kentucky:
Polyporus picipes.—Panus stipticus.

MacCLEMENT, W. T., Nova Scotia:
Polystictus hirsutus.—Polyporus Schweinitzii.—Polystictus pergamenus.—Polyporus varius.—Polystictus perennis.—Hydnum caeruleum.—Hydnum geogenium.—Polyporus elegans.—Hydnum fragile.—Irpex lacteus.—Hydnum mirabile.—Daedalea confragosa.—Fomes igniarius.—Polystictus cinnabarinus.—Fomes pinicola.—Fomes fomentarius.—Polyporus lucidus.—Lenzites saepiaria.—Lentinus ursinus.—Irpex tulipifera.—Fomes leucophaeus.—Polyporus albellus.

MILLE, REV. LOUIS, S. J., Ecuador:
Cora pavonia.—Ductifera Millei. (Will be published in Mycological Notes.)—Stereum (Sec. Hymenochaete) rheicolor.—Lycoperdon cepaeforme.—Stereum (Lloydella) albobadium. (See Note 601.)—Bovista pila. (See Note 602.)

MOXLEY, L. GEO., California:
Polyporus volvatus.

NOBLE, MRS. M. A., Florida:
Polystictus focicola.—Xylaria Hypoxylon?—Amanita solitaria.—Pleurotus sapidus.—Lentinus lepideus.

OVERHOLTS, L. O., Pennsylvania:
Hydnum subsquamosum.—Hydnum ochraceum.—Hydnum amicum.—Clavaria mucida.—Dacryomyces aurantia.—Porothelium fimbriatum.—Exidia recisa.—Mucronella aggregata.

PARISH, S. B., California:
Polystictus abietinus.

PAUL, J. T., Australia:
Stereum illudens.—Mylitta australis.—Trametes lilacino-gilvus.—Daldinia concentrica.—Polyporus pusillus.—Polystictus versicolor.—Tremella fuciformis.—Fomes ochroleucus.

PAYSON, EDWIN, Wyoming:
Lycoperdon nigrescens.

PLITT, CHAS. C., Maryland (specimens from California):
Xylaria Hypoxylon.—Polystictus conglomerus. (Will be published in Mycological Notes.)

RITCHIE, A. H., Jamaica:
Sphaeropsis tumefacieus. (Named by Mr. Ritchie.)

ROSEN, H. R., Cuba:
Xylaria grammica.

SCARFE, W. A., New Zealand:

Schizophyllum commune.—Trametes serpens. (See note 603.)—Hydnum rufescens.—Fomes robustus.—Polystictus trizonatus.—Polyporus atrostrigosus. (Will be published in Mycological Notes.)—Polyporus applanatus.—Helotium citrinum.—Fomes hemitephrus.

SMALL, W., Africa:

Polyporus cinerescens.—Polystictus leoninus.—Lentinus Sajor Caju.—Polystictus sanguineus.—Polystictus Fischeri.—Polyporus arcularius.—Lenzites repanda.—Polyporus vinosus.—Stereum lobatum.—Stereum surinamense.—Fomes senex.—Fomes caliginosus.—Polystictus microloma.—Polystictus xanthopus.—Polystictus melanopus.—Hexagona atrosanguinea. (See Note 604.)—Hexagona Smallii. (Will be published in Mycological Notes.)—Polystictus helveolus. (See Note 605.)—Cladoderris infundibuliformis. (See Note 606.)—Polystictus luteo-olivaceus (stipitate). (Will be published in Mycological Notes.)—Polystictus Baurii. (Published in Mycological Notes, page 698.)—Polystictus vibecinus. (Published in Mycological Notes, page 698.)—Trametes obstinatus.—Polystictus obstinatus. (Will be published in Mycological Notes.)—Hexagona tricolor. (See Note 607.)—Polyporus (Amaurodermus) salebrosus. (Published in Mycological Notes, page 693.)—Polyporus unitus. (Published in Mycological Notes, page 699.)—Stereum frustulosum. (Published in Mycological Notes, page 696.)

STEVENSON, J. A., Porto Rico:

Xylaria apiculata.—Xylaria multiplex.—Poria undata.—Lenzites saepiaria.—Polystictus hirtellus.—Geaster velutinus.—Xylaria scopiformis.—Polyporus submurinus. (See Note 608.)—Xylaria Schweinitzii.—Xylaria fimbriata. (Will be published in Mycological Notes.)

STOCKER, DR. S. M., Minnesota:

Secotium acuminatum.—Lindbladia effusa.—Stemonitis splendens.—Mutinus elegans.—Psalliota campestris. Teratological condition.

STOWARD, DR. F., Australia:

Polyporus australiensis. (See Note 609.)—Trametes lilacino-gilvus.—Polyporus decipiens.—Stereum hirsutum.—Lycoperdon pusillum.—Fomes badius.—Fomes Robinsoniae.—Polysaccum pisocarpium.

TAYLOR, ROSE M., Colorado:

Polystictus albo-luteus.

TORREND, REV. C., Brazil:

Polyporus lucidus.—Polystictus (Sect. Pelloporus) lignicola. (Published in Mycological Notes, page 696.)—Polyporus (Gan.) dorsalis. (Published in Mycological Notes, page 658.)—Polyporus (Amaur.) infulgens. (Published in Mycological Notes, page 656.)—Gramnothele grisea. (?)—Polyporus subfulvus.—Polyporus terebrans.—Polyporus guaraniticus.—Thelephora multipartita.—Polyporus Rickii.—Scleroderma nitidum.—Polystictus haedinus.—Polystictus occidentalis.—Fomes marmoratus.—Polyporus Oerstedii.—Fomes melanoporus.—Fomes inflexibilis. (See Note 610.)—Polyporus licnoides.—Lycoperdon rubellum.—Polyporus marasmoides.—Stereum nitidulum.—Cordyceps militaris?

UMEMURA, J., Japan:

These specimens were accompanied by a fine set of photographs and drawings which greatly aided in their determinations.

Cordyceps ophioglossoides. (See Note 611.)—Peziza (Macropodia) macropus.—Lenzites subferruginea. Close gilled form. (Will be published in Mycological Notes.)—Polyporus Schweinitzii.—Helvella Ephippium.—Polyporus sulphureus.—Lenzites trabea.—Stereum hirsutum.—Polystictus abietinus.—Polystictus spadiceus.—Stereum Burtianum.—Stereum pusillum?—Hydnum olidum. (See Note 612.)—Polyporus frondosus.—Lenzites subferruginea, (distant gills). (Will be published in Mycological Notes.)—Irpex Tanakae. (See Note 613.)—Irpex lamelliformis. (Will be published in Mycological Notes.)—Geoglossum hirsutum, form depauperatum. (Published in Mycological Notes, page 700.)—Scleroderma verrucosum.—Hydnum albidum.—Geoglossum hirsutum.—Polystictus elongatus.—Stereum spectabile. (Will be published in Mycological Notes.)—Stereum (Hymenochaete) liratum. (Will be published in Mycological Notes.)—Trametes Dickinsii.—Polystictus versatilis.

WEIR, JAMES R., Idaho:

Calvatia pachyderma. (See Note 614.)—Calvatia sculpta. (See Note 615.)—Fomes (or Poria) tsugina.

WEIR, JAMES R., Philippines:

Polyporus Elmeri. (See Note 616.)—Trametes paleacea.

YASUDA, A., Japan:

Stereum rimosum.—Hydnum violascens. (See Note 617.)—Polyporus Komatswzakii, (as named by Prof. Yasuda).—Aleurodiscus japonicus.—Septobasidium pedicellatum.—Polystictus venulosus.—Hymenochaete versiformis.—Naemospora microspora.—Polyporus ovinus.—Irpex lacteus.—Pleurotus striatulus.—Dacryomyces aurantia. (See Note 618.)—Polystictus hirsutulus.—Polystictus azureus.—Irpex tabacinus. (See Note 619.)—Asterostroma epigaeum. (Will be published in Mycological Notes.)—Lenzites tenuis. (Will be published in Mycological Notes.)—Irpex purpureus. (Will be published in Mycological Notes.)—Trametes sensitivus. (Will be published in Mycological Notes.)—Cudonia japonica. (See Note 620.)—Polyporus dispansus. (See Note 621.)—Polyporus rutilans.—Poris inermis.—Polystictus neaniscus.—Polystictus gypseus.—Polyporus lucidus.—Isaria Japonica. (Will be published in Mycological Notes.)—Panus japonicus. (As named by Prof. Yasuda.)—Trametes serpens.—Polystictus orientalis. (See Note 622.)—Stereum spadiceum.—Daedalea unicolor.—Trametes Dickinsii.—Polystictus Persoonii.—Lenzites tricolor. (See Note 623.)—Polyporus cristatus. (See Note 624.)—Polystictus hirsutus. (See Note 625.)

NOTE 581.—**Polystictus versipora, from P. van der Bijl, South Africa.** This has a narrow, reflexed border not known in the European species, which is a Poria, also an ochraceous tint. The general appearance of the plant, however, and the peculiar, guttulate spores show its very close relationships. Irpex lacteus is another plant closely related.

NOTE 582.—**Polyporus Goetzii (?), from P. van der Bijl, South Africa.** Or perhaps unnamed. The specimen has dried very poorly and it is impossible to state what its color or characters were when fresh. There are so few Polypores from sclerotia and the only similar one named from Africa is the above (cfr. Ovinus Pamphlet, page 75, fig. 496). I have seen somewhere where it has been given as a synonym for the more common Polyporus sacer (cfr. Stip. Polyporoids, page 122, fig. 420) of Africa, but I consider that surely a mistake. The spores of this specimen are 3x6, hyaline, smooth. If this is Polyporus Goetzii, it is not nearly as good a specimen as the type at Berlin, and if not, it should not be named from this specimen.

NOTE 583.—**Lanopila Wahlbergii, from P. van der Bijl, South Africa.** We considered this plant in detail on page 190, Mycological Notes, under the name Lanopila bicolor. At the time we were quite convinced it was the plant Fries had named Lanopila Wahlbergii from South Africa, but as no type exists, and as the species was not known to me from South Africa, I did not feel justified in using Fries' name, as I do now that a specimen has been received from the "type locality." A full account of the plant was given in Mycological Notes and we have little to add. The microscopic features are: capillitium, of thin, matted, intertwined and branched threads. Spores dark, globose, 8 mic. without apiculus, strongly echinulate. We have had two previous collections from tropical Africa, but this is the first from South Africa, "the type locality." Other collections (10) we have from Mexico, West Indies, South America, and India. The plant is of a tropical type and is unknown from Europe or the United States.

NOTE 584.—**Stereum vellereum, from P. van der Bijl, South Africa.** With yellow hymenium. The character of Stereum vellereum as it differs from Stereum hirsutum is the pale, uncolored surface hairs. S. hirsutum has brown hairs. In the Australian form S. vellereum has pale hymenium. In this collection yellow. As we refer to Stereum hirsutum collections with varying hymenium color, I think we shall have to do the same with Stereum vellereum.

NOTE 585.—**Trametes subflava, from P. van der Bijl, South Africa.** Entire plant (including context) unicolorous, about maize yellow with pore mouths some darker, ungulate, sessile. Context light and stupose. Pores very minute, little developed, Cystidia with capitate, rough heads. Spores (if correctly seen) globose, 4-5 mic.

We received this before from Mr. van der Bijl (No. 79) and at the time referred it, with doubt, to Fomes connatus, which is somewhat similar in color and has same spores and peculiar cystidia. An additional collection, however, which is the same exactly as the first, and which differs from Fomes connatus in manner of growth, and particularly in its soft, punky context, convinces us that we were wrong, and the only thing to do with it is to name it as a Trametes, where it belongs.

It reminds one of Fomes floccosus, of Ceylon (which is perhaps a better Trametes) as to light context, and of Fomes connatus as to color, cystidia, and spores.

NOTE 586.—**Xylaria Longiana, from Rev. A. Boutlou, West Virginia.** This is the most common Xylaria we have around Cincinnati, and has always been known in American mycology as Xylaria Hypoxylon, and is probably best classed as a small form of this species. Long sent it to Rehm, who named it as above. If it is really a valid species, they were a "long" time finding it out.

NOTE 587.—**Polyporus grammicola, from L. J. K. Brace, Bahamas.** I recently saw this plant from Bermuda in New York Botanical Gardens, named as above by Mr. Murrill. I do not know that it has been published, but I consider it a very good species. The specimen at New York is very irregular and suggests the section Merismus, but these are more perfect with simple stems and we would class the plant in Ovinus. The pores, no doubt white when fresh, become adustus in drying. The abundant spores are 3 x4, hyaline, smooth, often guttulate. Mr. Brace states that it grows "from the ground among the grass and absorbs water like a sponge and as a rule is malodorous." The latter character the specimens still retain.

NOTE 588.—**Gauteria morchelliformis, from D. L. Crawford, California.** This is exactly same on comparison with the European plant. I presume from description it is what Harkness called Gauteria monticola. This is the first Gauteria I have ever received from the United States. Our hypogeal fungi are very imperfectly known.

NOTE 589.—**Hypocrea sulphurea, from C. W. Demetrio, Missouri.** This is our only common Hypocrea and has been generally confused with Hypocrea citrina until the matter was straightened out by Seaver. It grows usually on branches and wood, but this collection is on decomposed fungus lying on the ground, and is the first that has reached me excepting on wood. As Hypocrea citrina was originally on the ground (and reported on dead fungus) I had the impression that the habitat was the main difference, but it is not. Hypocrea sulphurea and Hypocrea citrina are entirely different plants in color and texture. While I have not looked up the Hypocreas in the museums, I do not have in my collection Hypocrea citrina excepting from Europe. (Cfr. Note 454.)

NOTE 590.—**Anthurus MacOwanae, from Miss A. V. Duthie, South Africa.** Growing in turf, November, 1916. Miss Duthie also sends a fine, colored drawing. It is well figured, Myc. Notes, page 571. As a matter of truth I believe it is the same as the Australian plant, Anthurus aseroeformis (cfr. Phalloid pamphlet, page 42, also Myc. Notes, page 571). Miss Duthie also sends an egg of the plant in alcohol, which enabled me to determine its embryonic relations, as published in Mycological Notes, page 690.

NOTE 591.—**Polyporus aureus, from M. R. Espinosa, Chile.** Pileus dimidiate, sessile, growing on rotten trunks. Color orange, about tawny of Ridgway. Surface with a thin, fragile, rugulose, glabrous crust which separates from the pores. Context none, or very slight. Pores minute, orange, rigid, with dark mouths. Setae none. Spores not found. Excepting the common Polystictus sanguineus, and cinnabarinus, red polypores are rare. This one does not approximate any species known to me. I would enter it in section 92, although context is not "soft, spongy."

NOTE 592.—**Poria xanthospora, from Geo. L. Fisher, Texas.** This is a rather rare species, noteworthy from the great abundance of its yellow spores. I have been confused regarding it for many years, calling it Poria Andersonii. I gathered it probably twenty years ago and sent it to Ellis. He referred it to Poria Andersonii, a species that he had discovered, and I supposed, of course, it was right. I knew all the time that it was what Underwood had named, but it was a later name. Just a few weeks ago I was working in the New York Botanical Gardens and noted the "type" specimens of Poria Andersonii. It is resupinate Polyporus glomeratus, a quite different species from Poria xanthospora.

NOTE 593.—**Polyporus (Amaurodermus) rugosus, from Miss Margaret L. Flockton, Australia; collected by Mr. Lucas Gordon.** In our Stipitate Polyporoids we called this Polyporus rudis (page 111), but abundant specimens received from Australia convince us that there is no real

difference between it and the Eastern plant, as we suspected and stated. It is the only fairly frequent species of the section Amaurodermus. Miss Flockton reports the pore mouths "pure white" when fresh. They are always discolored and usually black in dried specimens.

NOTE 594.—**Fomes malvenus, from T. Hunter, Africa.** Thick, hard, subresupinate, with narrow, thickened, subpileate border. Pileate surface black. Context dark, fuliginous. Pores minute, with grey mouths, probably white when fresh. Setae none. Spores hyaline, globose, 3 mic.

I collected this same species in Samoa (cfr. Fomes pamphlet, page 282). I took it to be abnormal, but having this African collection exactly the same, I think now it is the normal form. Still it is very close and may be an abnormal form of Fomes melanoporus. Fomes tropicalis, from the American tropics, is similar in appearance, but according to my notes has paler context (cfr. Fomes Synopsis, page 286).

NOTE 595.—**Auricularia delicata, from T. Hunter, Africa.** This is an ambiguous specimen. The same exactly that caused the controversy between Moeller and Bresadola whether it should be referred to Auricularia delicata or Hirneola auricula-Judae (cfr. Note 340, Letter 60, where it was discussed in full).

NOTE 596.—**Stereum Bolleanum, from T. Hunter, Africa.** Cfr. Stipitate Stereums, page 26. It is reddish brown now but was "white" when fresh. When I wrote the pamphlet I suggested that some of the specimens that are brown in the museums were probably white when growing.

NOTE 597.—**Polyporus (Gan.) Curtisii, from T. Hunter, Africa.** This is held by some to be a species and by others to be a condition of Polyporus lucidus that has not developed the reddish brown, resinous surface. In my opinion it is entitled to specific rank, for it is geographic. Polyporus lucidus is common in temperate region countries. Polyporus Curtisii only occurs as far as I know in Southern United States and in Africa. It seems rather common in Africa and it is strange it does not come in from other tropical countries.

NOTE 598.—**Trametes versiformis, from T. Hunter, Africa.** This is only an unstained condition of Trametes Persoonii. Sometimes specimens are caught by the dry weather and the development is arrested before they acquire the reddish stain on the top. (Cfr. Note 415, Letter 61.)

NOTE 599.—**Fomes hornodermus, from T. Hunter, Africa.** This specimen has very abundant spores. They are obovate or piriform, 4-5x8-9, tapering to the base. When we wrote our Fomes pamphlet we referred, with some doubt, Fomes sulcatus of the American tropics to this species, for it has slightly larger pores and softer context. We find now that it has the same spores and have now no doubt that the reference is correct.

NOTE 600.—**Rhizopogon rubescens, from L. C. C. Krieger, California.** Mr. Krieger records the color changes as follows: Immature gleba, olive buff (Ridg.). Ripe gleba, ecru olive. Peridium changes from white to Etruscan red.

The species of Rhizopogon are very much the same when dried and it would aid very much if collectors would note the colors and change of colors of the fresh plant.

NOTE 601.—**Stereum (Lloydella) albobadium, from Rev. Louis Mille, Ecuador.** Pileate, attached by a reduced base. Those who are familiar with Stereum albobadium as it occurs commonly in the United States, usually resupinate with a narrow, reflexed margin, might question the reference of this pileate collection. With the same color, structure, metuloids, and spores, I feel no doubt that it is the same species. The pileus surface is glabrous, and there are but few similar, glabrous, pileate Stereums.

NOTE 602.—**Bovista pila, from Rev. Louis Mille, Ecuador.** There are two species, Bovista pila and Bovista nigrescens, which to the eye are the same. The difference is a spore difference, the latter has pedicels, the former none. Bovista pila is frequent in the United States, and does not occur in Europe to my knowledge. The occurrence of Bovista nigrescens is the reverse, and it is strange that while it is apparently absent from the United States, it reaches me from Mexico and South America. This, I believe, is the first collection of Bovista pila I have gotten from South America.

NOTE 603.—**Trametes serpens, from W. A. Scarfe, New Zealand.** To the eye it is exactly Trametes serpens, as I saw it, in the old, scanty collection at Upsala. I do not know it well in Europe, nor at all in this country, although we have a plant here that is very common, called (in error) Trametes serpens.

NOTE 604.—**Hexagona atrosanguinea, from W. Small, Africa.** This is the first collection we have received. The only other one we know is the type at Berlin (cfr. Synopsis Hexagona, page 27). The species is close to Hexagona tricolor, but has larger pores and the whole plant is more red. It is well named.

NOTE 605.—**Polystictus helveolus, from W. Small, Africa.** These are the first specimens I have gotten and have heretofore known only the type. It came to Fries from Africa many years ago. I have compared this collection with a piece of the type and it seems the same to me. The plant is on the order of occidentalis, but more brown. The context may well be called "helveolus," but the surface is deeper brown.

NOTE 606.—**Cladoderris infundibuliformis, from W. Small, Africa.** This fine collection raises the old question if this species is or is not the same as Stereum caperatum. When we went over it in the museums of Europe we decided that it is not, but intermediate collections such as this bring the question back. As a matter of truth I think now they are about the same. The only one point where the collection differs from Stereum caperatum is the presence of abundant papillae. The papillae feature of Cladoderris has been shown, however, to be a very varying factor (cfr. Letter 63, Note 469).

NOTE 607.—**Hexagona tricolor, from W. Small, Africa.** We have heretofore referred this to Hexagona discopoda, but there is no doubt it is same plant that Fries named from Africa years ago. Fries gave a fairly good illustration, and his description accords, and it is so common that it is improbable that it is a "new species" at such a late date. The color of Fries' figure in Reliquiae Afzelianae is misleading, and not the color of the plant, but it will be noted that the color of all the figures in this work are the same, having no relation to the colors of the plants. The plant is deep brown (fuscus as Fries calls it) and usually has a dark, reddish brown stain behind (umbrinus of Fries). There are two forms in Africa, both common. Hexagona tricolor with a plain, even pileus and Hexagona umbrinella, otherwise the same but with the pileus rugulose and uneven. Both are, in my opinion, the same species. However, Hexagona Burchelii is the same type of plant but with larger pores.

NOTE 608.—**Polyporus submurinus, from J. A. Stevenson, Porto Rico.** White form. We refer this to above species, which is the only one with which it agrees in surface, texture, and spores (2½x8 straight). It is white and does not have the cinereous color of the original, but we prefer to refer to it as a white form, rather than to name it.

NOTE 609.—**Polyporus australiensis, from Dr. F. Stoward, West Australia.** It is strange that this remarkable plant was only named in recent years (cfr. Note 270). It seems fairly common in Australia. When fresh it is a brightly colored species. The flesh, which is very soft and spongy, is bright orange color, which fades out on the exposed surface, but is seen on breaking the specimen. Spores are 4x8, elliptical. The globose spores recorded in previous notes are no doubt conidial.

NOTE 610.—**Fomes inflexibilis, from Rev. C. Torrend, Brazil.** The type of this was from Brazil, and this is the first time I have gotten it. I suspect, however, that the plant called Fomes rheicolor is the same thing with brighter context color.

NOTE 611.—**Cordyceps ophioglossoides, from J. Umemura, Japan.** This is the first record of the species in Japan. We gave a figure and account of the species, Myc. Notes, page 608. As it occurs not rarely in the United States and Europe, it naturally could be expected to grow in Japan, and we anticipated it on page 609, Mycological Notes.

NOTE 612.—**Hydnum olidum, from J. Umemura, Japan.** This was named from Japan fifty years ago by Berkeley, but this is the first collection since from Japan. The color of the plant is orange brown and some specimens retain the color in drying. Others dry almost black. I have the plant from India. (Cfr. Note 524, Letter 65.)

NOTE 613.—**Irpex Tanakae, from J. Umemura, Japan.** This was named from Japan. For me it is a form of Irpex lacteus with lamelliform teeth. The pileus is not smooth as described, but rather minutely appressed, pubescent. The plant is pure white.

NOTE 614.—**Calvatia pachyderma, from James R. Weir, Montana.** The spores are globose, 6-7 mic. apiculate, tubercular (not smooth as I recently recorded from South America from immature specimen).

NOTE 615.—**Calvatia sculpta, from James R. Weir, Montana.** Cfr. Myc. Notes, page 203. This plant has heretofore been known only from the Sierra Nevada Mountains.

NOTE 616.—**Polyporus Elmeri, from James R. Weir, from the Philippines.** This is surely the same as the type and it is the second collection known. The type was described as having white flesh, but the flesh of this is pale pink and there is a pinkish cast to the type I note now. I included the species in Section 88 of my pamphlet, but it is very close to Polyporus rigidus, also to the plant called Polyporus abruptus.

NOTE 617.—**Hydnum violascens, from A. Yasuda, Japan.** We determine this from description only as we have no specimens from Europe, where it is rare, and it is unknown from the United States. Prof. Yasuda describes it when fresh as having pileus and spines of violet, and indications of the color still remain. The spores are subhyaline, irregular, tubercular.

NOTE 618.—**Dacryomyces aurantia, from A. Yasuda, Japan.** The plant is more applanate, but I think is the same species as our American plant. Same color, basidia and spores. This is the first time the species is recorded outside the United States. It does not occur in Europe.

NOTE 619.—**Irpex tabacinus in Japan.** On comparing Irpex iyoensis, named in Mycological Notes, page 633. I conclude it would have been better referred to Irpex tabacinus. I did not compare it at the time for my idea of tabacinus was a resupinate plant (only), and the Japanese plant is pileate.

NOTE 620.—**Cudonia japonica, from Prof. A. Yasuda, Japan.** Additional specimens from Prof. Yasuda confirm, to my mind, this species. To the eye it is much like Cudonia circinans, but the spores are about twice as large. (Cfr. Geoglossaceae, page 17.)

NOTE 621.—**Polyporus dispansus, from Prof. A. Yasuda, Japan.** Additional fine collections from Prof. Yasuda fully confirm this species. (Cfr. Stipitate Polyporoids, page 192.) We like to get these additional collections confirming the species named, for one does not really know a species from a single collection.

NOTE 622.—**Polystictus orientalis, from Prof. A. Yasuda, Japan.** As named by Prof. Yasuda. P leus thin, rigid, smooth, minutely pubescent, pale, grayish, unzoned. Context thin, white, stupose. Pores small, 3 to mm., white, round, regular. Cystidia none. Spores not found. This is the third collection I have received from Prof. Yasuda (viz.: Nos. 133, 2, and 468). It measures 5-8 cm. Prof. Yasuda states it occurs 12x19 cm., but old specimens are usually eaten by insects.

NOTE 623.—**Lenzites tricolor, from Prof. A. Yasuda, Japan.** Irpicoid in form. This European species, found in Japan, does not occur in the United States, illustrating the aberrant distribution of fungi. Cooke named it from China, Lenzites sinensis.

NOTE 624.—**Polyporus cristatus, from Prof. A. Yasuda, Japan.** This is the first collection from Japan. It is a rather unusual species in Europe, but more frequent with us in the United States (cfr. Section Ovinus, page 80, fig. 501).

NOTE 625.—**Polystictus hirsutus, from Prof. A. Yasuda, Japan.** This collection is thinner than our usual plant, but surely the same. Some of the specimens have the coloration of Polystictus ochraceous, demonstrating that that is only a color form of hirsutus.

NOTE 626.—**Paulia resinacea.** Mr. J. T. Paul, Australia, in a recent letter, gives us additional information with regard to the habits of the curious Paulia resinacea, which we published in Mycological Notes, 595. The plants grew from a crack in an old log, the outside of which had been charred. The collection made consisted of only a few specimens and the species is evidently rare, as a diligent search failed to discover additional specimens. The genus Paulia is one of the most curious genera that has come to my notice since I have worked on the subject.

NOTE 627.—**Polyporus Berkeleyi in Australia.** We have received from Dr. Cleland a characteristic photograph of Polyporus Berkeleyi, as it occurs in Australia. We received pileoli from Dr. Cleland of which we previously made a record. The photograph that Dr. Cleland sends is characteristic of Polyporus Berkeleyi as it occurs in this country and in connection with the specimen there is no possible question now. The Australian plant has the same habits and other characters as the American plant. With us in the United States Polyporus Berkeleyi is the largest species we have and usually occurs at the base of oak stumps from a rooting sclerotium base. Dr. Weir records it from Idaho, but in connection with the hemlock instead of the oak. In Europe Polyporus Berkeleyi is rare and only occurs in a sub-simple form called Polyporus montanus. There is a question of the occurrence of the plant in Japan, though it is strange it has not been received from there in recent collections. Its record in Japan is based on a single pileolus preserved at Kew.

NOTE 628.—**Cyttaria.** Marcial R. Espinosa, Chief of Cryptogamic Section at the National Museum, kindly advises me additional details in regard to genus Cyttaria. As they grow, Cyttarias are first white, being covered with a thin, white, universal membrane. As this membrane disappears they become orange, taking on the color of the ascophore. The membrane bursts on the mouths of each pit only and its fragments remain at the edge of the orange pits. The color of the ripe spores is dark olivaceous. They are globose and measure about 12-14 mic. The species of Cyttaria occur on Nothofagus, namely Nothofagus Dombeyi and Nothofagus obliqua, and the Cyttaria is concurrent with the distribution of its host. Both species occur in the Province of Colchagua near Santiago.

NOTE 629.—**Cordyceps sphaecocephala and Cordyceps cinerea.** Rev. Rick, now located in Brazil, previously collected at Feldkirch, Austria. He writes me that both these Cordyceps were quite common in the vicinity of Feldkirch. Cordyceps cinerea, as I stated in Note 158, is the original of Cordyceps entomorrhiza, which has been transposed from the early botanists. It is extremely rare, however, in England and has never been collected there since the old work of Dickson, one hundred and thirty years ago.

Cordyceps sphaecocephala, I think, is unknown from England, though Quélet collected it in France and naturally discovered it was a "new species."

SOME HISTORICAL FRIESIAN SPECIMENS.

Through the kindness of Mr. Romell, we are in receipt of three pieces of Natal fungi collected by Wahlberg and named by Fries. A package from Wahlberg, lost for many years, has recently turned up in the Swedish Museum of Natural History. For convenience in citing, we have numbered them as notes.

NOTE 630.—**Polyporus Wahlbergii,** named by Fries as Trametes. It is in everything the common Polyporus gilvus. What was supposed to be a type is at Upsala and is a different plant, viz., Polystictus occidentalis. Fries' description evidently covers Polyporus gilvus and does not apply to his type at Upsala.

NOTE 631.—**Polyporus isidioides.** This was named by Berkeley and cited by Fries. It is as is well known, Polyporus scruposus, which is a form at best of Polyporus gilvus.

NOTE 632.—**Polyporus ursinus.** This was named by Link from Brazil, and the original is undoubtedly Trametes hydnoides, as considered by Fries in his Epicrisis. The African plant so referred by Fries is common in the museums under the name Trametes hydnoides, but is an error, I believe. This African plant is Trametes hystrix and it always has larger pores than the American plant (cfr. Myc. Notes, page 612). Trametes hydnoides does not occur in the East, and Trametes hystrix does not occur in American tropics.

NOTE 633.—Prof. John Dearness, London, Ont., requests us to give to Mr. F. Johansen credit for collecting **Calvatia cretacea** at Kay's Point. We considered this in Mycological Notes, page 650, and credited it to Prof. Dearness. Kay's Point is located near the mouth of the Mackenzie River, about 70 N. and 140 W.

ADDENDUM.

The following packages were worked over by us since the previous copy was sent to the printer. We have still on hand a large number of collections, more perhaps than we shall be able to study this year.

BABCOCK, D. C., Ohio:

Boletus modestus.

BALLOU, DR. W. H., New York:

Polyporus elegans.—Polyporus radiatus.—Polyporus cuticularis.—Favolus Europaeus.—Polystictus circinnatus.—Fomes fomentarius.—Polyporus Spraguei.—Polyporus crispus.—Poria tulipifera.—Polyporus albellus.—Polyporus trabeus.—Hypomyces viridis.—Hypomyces Lactifluorum.—Poria aurantiaca.—Trametes malicola.—Polyporus cuticularis.—Daedalea unicolor.—Peniophora heterocystidia (named by Prof. Burt).—Rhinotrichum Curtisii.—Poria pereffusa.

BIJL, P. VAN DER, South Africa:

Fomes hornodermus.—Lentinus Sajor Caju.—Polystictus luteo-olivaceus.—Scleroderma Cepa.—Calvatia lilacina.—Fomes melanoporus.—Hexagona tricolor.—Favolus Europaeus.—Guepinia spathulata.—Lentinus stuppeus.—Polyporus gilvus.—Polyporus capensis.—Polyporus vinosus.—Polystictus tabacinus.—Auricularia delicata.—Polyporus fruticum.—Fomes Caryophylli.—Lentinus velutinus.—Hexagona albida.—Auricularia squamosa.—Polyporus dictyopus.—Hirneola auricula-Judae.—Stereum subpileatum. (See Note 634.)—Septobasidium pedicellatum. (Published in Mycological Notes, page 720).—Dacryomyces digressus. (See Note 635.)—Lycoperdon djurense. (See Note 636.)—Polystictus cryptomeniae. (Will be published in Mycological Notes.)—Geaster saccatus.—Trametes Dregeana.—Stereum lobatum.—Stereum hirsutum.—Hirneola auricularis. (See Note 637.)—Stereum proximum.

BOURDOT, REV. H., France:

An interesting addition to our museum, all as named by Rev. Bourdot. Those marked with a * are as yet unpublished:

Tremella gemmata.—Solenia fasciculata.—Tremella tubercularia.—Exidia Friesiana.—Septobasidium Galzinii.*—Tomentella Phylacteris.—Tremella virescens.—Asterostroma ochroleucum.—Helicobasidium helospirum.*—Exidia umbrinella.—Tremella indecorata.—Tremella moriformis.

BOUTLOU, REV. A., West Virginia:

Polyporus gilvus.—Stereum bicolor.—Guepinia spathulata.—Hypoxylon cohaerens.—Sebacina incrustans.—Hypocrea sulphurea.—Merulius incarnatus.—Trametes carnea.—Lenzites betulina.—Stereum (Hym.) tabacinum.—Trametes sepium.—Aleurodiscus acerinum.—Hydnum ochraceum.—Tremella mesenterica.—Daedalea unicolor.—Poria tulipifera.—Cantharellus cinnabarinus.—Stereum spadiceum.—Polyporus cuticularis.—Stereum complicatum.—Stereum fasciatum.—Ozonium auricomum. — Polyporus Spraguei. — Polystictus pergameneus. — Lycoperdon

gemmatum.—Peniophora cinerea.—Trametes robiniophila.—Lenzites trabea.—Polyporus albellus.—Lycoperdon subincarnatum.—Polyporus dichrous.—Lycoperdon Wrightii.—Polystictus versicolor.—Scleroderma vulgare.—Polyporus sulphureus.—Polystictus hirsutus.—Polyporus giganteus.—Poria inermis.

BOYER, REV. A., Maryland:
Polyporus rutilans.—Porothelium fimbriatum.

BRACE, L. J. K., Bahamas:
Trametes submurinus.—Polystictus pinsitus.—Lentinus lepideus.—Guepinia spathulata.

BURKE, DR. R. P., Alabama:
Those marked with a star were named by Prof. Burt.
Corticium caeruleum.*—Corticium rubro-pallens.*—Peniophora velutina.*—Septobasidium castanea.* (cotype)—Septobasidium Langloisii.*—Poria inermis.—Polystictus rigens.—Lenzites rhabarbarina.—Fomes marmoratus.—Polystictus abietinus.—Polystictus cinnamomeus.—Poria punctata.—Poria pulchella.—Clavaria grisea.

BURNHAM, STEWART H., New York:
Thelebolus lignicola. (Will be published in Mycological Notes.)

DAVIS, S., Massachusetts:
Lachnea hemispherica.—Polyporus brumalis.—Polyporus trabeus.—Polyporus albellus.—Poria viticola.

DUPRET, H., Canada:
Merulius lacrymans.

DUTHIE, MISS A. V., South Africa:
Mucronella aggregata.—Calvatia lilacina.—Ombrophila nigrescens. (?)—Tremella mesenterica.—Poria ferruginosa.—Daedalea quercina.—Radulum mirabile.—Phellorina strobilina. (Will be published in Mycological Notes.)

EMERTON, J. H., Massachusetts:
Stereum purpureum.—Phlebia radiata.

ESTERBROOK, E. M., Massachusetts:
Polyporus trabeus.—Polystictus cinnamomeus.—Polyporus betulinus.—Daedalea confragosa.

GRANT, J. M., Washington:
Lycogala Epidendrum.—Polyporus picipes var. castaneus. (See Note 638.)—Polyporus Grantii. (Will be published in Mycological Notes.)—Morchella conica.—Morchella semilibera.—Polyporus picipes.—Polystictus cinnamomeus.—Physarum album (?).—Dacryomyces confluens.—Ustulina vulgaris.—Fomes annosus.—Polyporus obducens (?).—Trametes carnea.—Polystictus velutinus.—Polystictus Macounii.—Poria Vaillantii.—Gyromitra gigas.

HADLEY, MRS. A. M., Vermont:

Pleurotus nidulans.—Lycoperdon nigrescens.—Scleroderma vulgare.—Lentinus torrulosus.—Hydnum fimbriatum. (Will be published in Mycological Notes.)

HIBBARD, MISS ANN, Massachusetts:

Hydnum adustum.—Geoglossum robustum (rare).—Hypoxylon coccineum.—Polyporus borealis.—Macropodia macropus.—Lachnea hemispherica.—Polystictus velutinus.—Hypocrea sulphurea.—Polyporus fragilis.—Xylaria Cornu-Damae.—Poria calcea.—Otidea leporina.—Polyporus Rostkovii.—Peziza trachycarpa.—Polyporus pachycheiles (?).—Dacryomitra glossoides. (Will be published in Mycological Notes.)—Xylaria corniformis.—Polystictus cinnamomeus.—Polyporus ovinus.—Poria mutans.—Polystictus conchifer.—Polyporus albidus.—Craterellus cornucopioides.—Polyporus rheades. (Will be published in Mycological Notes.)

JOHNSTON, I. M., California:

Mycenastrum Corium.—Catastoma ater. (Will be published in Mycological Notes.)

LANGE, JAKOB E., Denmark:

Daedalea quercina (abnormal polyporoid form).—Polyporus melanopus.

MAC CLEMENTS, W. T., Nova Scotia:

Polyporus rutilans.—Fomes conchatus.—Polystictus versicolor.—Polyporus borealis.—Polyporus floriformis.—Daedalea confragosa.—Cantharellus clavatus. (Will be published in Mycological Notes.)—Thelephora palmata.—Polyporus rutilans.

MAIRE, LEON, France:

It is an unexpected pleasure during these trying war times to receive an interesting collection from France. Several were species not known to me, and of special interest. Those marked with a star are as named by Monsieur Maire.

Cystella succinea.*—Peniophora gigantea.—Polyporus adustus.—Merulius corium.—Tremella lutescens.—Fomes annosus.—Xylaria polymorpha.—Tomentella crustacea.*—Stereum rubiginosum.—Polyporus sulphureus.—Polyporus arcularius.—Polyporus brumalis.—Polyporus fumosus.—Lenzites saepiaria.—Polyporus varius.—Merulius tremellosus.—Polystictus perennis.—Fomes connatus.—Tomentella nigra.*—Hydnum caeruleum.*—Stereum bicolor.—Thelephora mollissima (most rare and interesting).—Marasmius ramealis.*—Hydnum amicum.—Hygrophorus penarius.*—Fomes igniarius var. nigrescens.—Peziza aurantia.—Xylaria carpophila.—Lentinus tigrinus.—Polyporus biennis.—Trametes odorata.—Polyporus elegans.—Polystictus hirsutus.—Polyporus dryadeus.—Polyporus giganteus.—Thelephora spiculosa (rare).—Polyporus hispidus.—Trametes suaveolens.—Fomes conchatus.—Lenzites betulina.—Tremella foliacea.—Peniophora quercina.—Trametes serpens.—Panus stipticus.—Arcyria incarnata.*—Polyporus tephroleucus.—Radulum orbiculare.—Stereum venosum (See Note 639.)—Polyporus lentus.—Gymnosporangium clavariaeformis.*—Polyporus alutaceus.—Pleurotus sapidus.—Polyporus trabeus.—Stereum hirsutum.—Fomes applanatus.—Hydnum ferrugineum.—Phlebia radiata.—Polyporus lucidus.—Stereum fastidiosum. (Will be published in Mycological Notes.)

MIGNAULT, REV. J. B., Canada:
Phalloid egg.

NEAD, J. D., Minnesota:
Lycoperdon cruciatum.—Clitocybe abortivus.

NOBLE, MRS. M. A., Florida:
Trametes lactea.—Polyporus gilvus.—Fomes fasciatus.—Scleroderma Geaster.—Laternea columnata.

OWENS, C. E., Oregon:
Odontia himantia.—Hydnum ochraceum (resupinate).

PARISH, S. B., California:
Merulius lacrymans.

PAUL, J. T., Australia:
Fomes setulosus.—Stereum lobatum.—Scleroderma aurantium.—Seismosarca hydrophora.—Clavaria Archeri (?).—Clavaria inaequalis.—Clavaria fusiformis.

RICK, REV. J., Brazil:
Polyporus supinus.—Geaster minimus.—Fomes inflexibilis.—Polystictus zonatus.—Polyporus inamoenus.—Polyporus applanatus.—Fomes fasciatus.—Irpex subcoriacens. (Will be published in Mycological Notes.)

STILLINGER, C. R., Oregon:
Polyporus adustus.—Fomes Juniperinus. (See Note 640.)

STOCKER, DR. S. M., Minnesota:
Polyporus rutilans.—Hirneola auriculae-Juda.—Naematelia encephala. (See Note 641.)—Peziza repanda.—Fomes marginatus. (Will be published in Mycological Notes.)—Tremella lutescens.—Lycoperdon umbrinum.—Tremella vesicaria.

VANDERYST, P., Hyac, Africa:
Polystictus occidentalis.—Polystictus xanthopus.—Polystictus luteo-olivaceus.—Schizophyllum commune.—Polystictus sanguineus.—Daldinia concentrica.—Polyporus lignosus.—Lenzites repanda.—Lenzites villosus.—Hexagona tricolor.—Hemitrichia Serpula.—Polyporus velutinosus. (See Note 642.)—Xylaria radicans. (Published in Mycological Notes, page 725.)—Polyporus Vanderystii. (Will be published in Mycological Notes.)

WHETSTONE, M. S., Minnesota:
Pilacre Petersii.—Pleurotus nidulans.—Peziza repanda.—Peziza scutellata.

NOTE 634.—**Stereum subpileatum, from P. van der Bijl, South Africa.** To the eye this is exactly the same as our Stereum subpileatum, though a section shows different. Subpileatum has thickened metuloid-like cystidia, which I do not find in this plant. Otherwise they are exactly the same. There is another plant named from Africa by Hennings as Hymenochaete (sic) tjibodensis. It is a Stereum, the same to the eye as this and probably the same species, although a section shows the cystidia spiny on the order of dendrophytes. Notwithstanding the microscopic differences, I think all three are one species. Bresadola has published somewhere, I think, that Hymenochaete (sic) tjibodensis is a synonym for Stereum rimosum. This is surely a mistake. V. Höhnel has endorsed the type at Berlin as being Stereum subpileatum, which is probably correct, although the cystidia are not the same. Mr. Bijl's plant probably has cystidia, but if so, they are hard to distinguish from the basidia, which is not the case with either of the others. In this connection Stereum "sub" (sic) pileatum has in our Southern States a pileus two inches wide, although it is included in Saccardo in the resupinate section. It is quite common in our Southern States, and is said to be the cause of the disease of the oak known as the "Honeycomb heart rot."

NOTE 635.—**Dacryomyces digressus, from P. van der Bijl, South Africa.** This as far as we know is endemic in South Africa (Cfr. Myc. Notes, p. 620). It was described as "dirty yellow.",

This specimen is pale clear yellow, about the color of Tremella lutescens. We remarked also as to the original that the spores are not septate. This specimen has most of the spores 5 to 7 septate. Septation of Dacryomyces spores, however, can always be counted on in old spores, as it is the preliminary stage to germination.

NOTE 636.—**Lycoperdon djurense, from P. van der Bijl, South Africa.** This is the only Lycoperdon known to me with purple gleba and hyaline capillitium, and it has only been collected in Africa. Henning named it Lycoperdon djurenses in 1901 and Patouillard Lycoperdon endotephrum in 1902. Henning stumbled over it first. I think also Massee had it as Lycoperdon natalense, but if so, misdescribed it, and I have misplaced my notes.

NOTE 637.—**Hirneola auricularis, from P. van der Bijl, South Africa.** As named by Fries from Brazil. The type is at Kew labeled Hirneola brasiliensis, but Fries changed the name in publishing it. For me, it is only a form of the ubiquitous Hirneola auricula-Judae, only smoother and paler. Fries describes it as glabrous, but it really is not glabrous, for the minute surface hairs are very evident under the microscope.

NOTE 638.—**Polyporus picipes var. castaneus, from J. M. Grant, Washington.** This is a very neat little form of our common Eastern plant, differing in its small size, and dark chestnut color of pileus. The usual form has a dark center, shading off to a hazel on the margin. This is uniform color and darker. By reference to Ridgway, it will be noted that chestnut color is only a dark hazel.

NOTE 639.—**Stereum venosum, from Leon Maire, France.** This is a rare species in Europe on frondose wood. It is a "Lloydella," and close to Stereum membranaceum, so common in the tropics. Stereum membranaceum occurs in extreme southern France, and it is a question if this is other than a temperate region form. The hymenium color dark olivaceous brown in this, purplish in membranaceum is the main difference. As to a name, it is not satisfactory. It is Stereum spadiceum of Bresadola (who claims of Persoon), but not of Fries nor of mycologists in general. Stereum spadiceum is too well established to be shifted. Nor is there any evidence that it is Persoon's plant; for there is but one specimen in Persoon's herbarium, and that was marked by Persoon himself as "doubtful." Stereum venosum, as named by Quélet I do not know, but said to be a synonym. We use it only as the last resort, but do not have much faith in it.

NOTE 640.—**Fomes juniperinus, from C. R. Stillinger, Oregon.** Collected near Bend, Oregon. This species, which seems to be confined to the juniper trees, has heretofore been supposed to be a southern or southwestern species only. While the rot caused by the fungus is said to be too frequent in juniper wood the fruiting bodies are rather rare. (Cfr. Fomes Synopsis, p. 232, and Mycological Notes, p. 522.)

NOTE 641.—**Naematelia encephala, from Dr. S. M. Stocker, Minnesota.** A rather rare plant with us, the second collection I have gotten from the United States, and both on oak. I collected the species in Sweden always on pine.

NOTE 642.—**Polyporus velutinosus, from P. Hyac Vanderyst, Congo, Belge.** We figured and published this in our Fomes pamphlet (page 260) as Fomes velutinosus, but as there stated, we do not know it excepting as a Polyporus. We suspect that it is the Polyporus form of Fomes senex, but it always seems quite distinct, and would be looked for as a Polyporus.

NOTE 643.—**Un autre rival du Kaiser.** Que le Kaiser prenne garde; un autre rival monte à l'horizon, lui aussi un partenaire de Dieu.

"Les noms marqués d'un astérisque sont ceux des espèces de nouvelle creation."—Quélet.

Jusqu'ici j'avais l'idée saugrenu que la "creation des espèces" etait l'oeuvre du Tout-Puisant—non de Quélet.

NOTE 644.—**Phallus rugulosus, from N. Gist Gee, China.** Our account of this plant in Synopsis of Phalloids should be corrected as to the pileus, which, instead of being "even or slightly rugulose," is convolute folded. In fact, it belongs to the "genus" Clautriavia of that pamphlet. Mr. Gee sends a specimen in alcohol, and there is no question as to the nature of the pileus. The species is only known from China and Japan.

NOTE 645.—**Lysurus mokusin.** When we published our article on Lysurus sinensis in Mycological Notes, page 718, we failed to mention Lysurus Beauvaisii, which had also been described as a new species from China. We were familiar with the plant, having seen it in the museum at Paris, but we were under the impression that it came from Japan. In looking up the original article by Molliard, we note that it is from China.

Lysurus Beauvaisii is evidently simply a synonym of Lysurus Mokusin. Mr. Molliard had exactly the same plant as illustrated by Cibot, which he cites, but probably never took the trouble to look it up. He tabulates a lot of differences that he thinks he found between Lysurus Mokusin and Lysurus Beauvaisii, but none of them are of any importance, and some of them at least not true. For instance, he says the former has a cylindrical stipe and the latter a fusiform stipe, but had he taken the trouble to look up the original figure he would have noted the stipe of Lysurus Mokusin is not cylindrical. In fact, we do not see in his account or figure of Lysurus Beauvaisii the slightest difference on which to base a species. The arms are not prolonged into a tip, as in Lysurus sinensis, which is the main point that we had in view when we looked up his account, for we referred his specimen to Lysurus Mokusin when we saw it in Paris.

NOTE 646.—**Favolus peponinus.** The plant we figured as Favolus Kauffmanii, Myc. Notes, p. 614, is surely the form that Berkeley called Polyporus Boucheanus var. peponinus (Ann. Nat. Hist. 2, 12, 432). "Polyporus Boucheanus," in sense of Berkeley, is Favolus Europaeus, and it never was "Polyporus Boucheanus."

NOTE 647.—**Polyporus Armitii.** Although I have found no type either at Berlin or Kew, and although described as coriaceo-membranaceus, I judge from the figure given Grev. t. 145, f. 22, it is probably Laschia Staudtii as published Myc. Notes, page 645.

LETTER No. 67.

Acknowledgment of specimens received since last report. My best thanks are extended to those who favored me with specimens. Some of the notes that will be illustrated with photographs will be published in future issues of Mycological Notes.

I wish to acknowledge the liberality with which specimens are being received from correspondents in foreign countries. Notwithstanding the precarious conditions of ocean shipments a number have been received which I have not found time to study. Only one, as far as we know, has been lost, from Rev. Louis Mille, Ecuador. As this copy is sent to the printer, there are on hand the following:

P. van der Bijl, South Africa. A large number requiring study in addition to those cited in this letter.

Dr. J. B. Cleland, Australia. Two packages.

Prof. A. Yasuda, Japan. One package.

Rev. Rick, Brazil. A number of packages have been worked over, but it is too late to include them in this letter. They include a lot of special interest which will be published.

E. D. Merrill, Philippines. A large shipment in addition to those acknowledged in this letter. We are working up a systematic account of the Philippine polypores, and hope to present a paper that will clear up the conflicting determinations of these plants published lately by several authors.

V. Demange, China. A number of interesting plants in addition to those cited in this letter, and which require special study.

T. Hunter, Gold Coast, West Africa. A large lot which have been worked over, but too late to be included in this letter. Mr. Hunter sends Xylaria gomphus, the first specimen I ever saw, and many other fine things that will be published.

G. Zenker, Congo Belge, Africa. Five packages in addition to those acknowledged in this letter. We have just gotten a fine lot of Xylarias from Mr. Zenker and a novel Daldinia.

We are much pleased to announce that we have retired from business and in future will have our entire time to devote to mycology, in which we are most interested. We have been trying to bring this about for several years and have only just succeeded. For the next two months we expect to travel in the West collecting, but will return to Cincinnati at the end of the collecting season and again take up work with specimens from our correspondents.

In my printed letter I do not give authority for names, believing that the binomial should represent a plant name, but in acknowledging the specimens to my correspondents I give the "authority" in event they desire to use the same. All specimens are acknowledged by personal letter as soon as I get time to study and report on them. Foreign correspondents may send speci-

mens to my English address, and they will reach me promptly, although in countries which have direct parcel post arrangements with the United States it is best to send them by parcel post direct to me. Specimens may be sent to either of the following addresses:

C. G. LLOYD,
224 West Court Street,
Cincinnati, Ohio.

C. G. LLOYD,
95 Cole Park Road,
Twickenham, England.

Cincinnati, Ohio, July, 1918.

ALLEN, LIZZIE C., Massachusetts:

Hydnum Schiedermayeri.—Favolus microporus.—Polyporus leporinus.—Polyporus perennis.—Polyporus trabeus.—Stereum hirsutum.—Xylaria polymorpha.

BABCOCK, D. C., Ohio:

Naucoria arvalis, with tubers.

BAKER, CHAS. H., Florida:

Polystictus Friesii.—Lentinus villosus.

BALLOU, DR. W. H., New York:

Those marked with a * as named by Prof. Burt.

Polyporus adustus.—Polyporus Spraguei.—Polyporus frondosus.—Polyporus glomeratus.—Polyporus galactinus.—Polyporus fumosus.—Odontia lactea.*—Hymenochaete Curtisii.*—Peniophora Peckii.*

BARKER, W. E., New Zealand:

Polyporus adustus.—Polystictus hirsutus.—Scleroderma Cepa.—Polystictus hirsutellus.—Daldinia concentrica.—Merulius Corium.—Secotium erythrocephalum. (See Note 648.)—Paurocotylis Pila.

BENSON, CHAS. G., Nevada:

Battarrea phalloides. (See Note 649.)

BETHEL, E., Colorado:

Mutinus elegans.

BIJL, P. VAN DER, South Africa:

Lysurus Gardneri. Photograph will be published in Mycological Notes.—Fomes robustus.—Fomes endotheius.—Fomes senex.—Polystictus zonatus.—Trametes devexa.—Trametes protea.—Polyporus gilvus.—Fomes annularius.—Scleroderma Cepa.—Polystictus aratus.—Lentinus Sajor Caju.—Polystictus sanguineus.—Auricularia auricula-Judae.—Lenzites betulina.—Stereum hirsutum.—Polystictus occidentalis.—Stereum pusillum.—Polystictus luteo-olivaceus.—Lenzites Muelleri.—Guepinia spathulata.—Stereum bicolor.—Cyathus Berkeleyanus.—Polyporus velutinosus.—Fomes geotropus.—Cladoderris infundibuliformis.—Polystictus versicolor.

BOUTLOU, REV. A., West Virginia:

Poria (or Irpex) tulipifera, or Irpex lactea Fr., which is a better pileate development of same thing.

Stereum fasciatum.—Polystictus hirsutus.—Urnula Craterium.—Stereum spadiceum.—Naematelia nucleata.—Polyporus Spraguei.—Tremello-

dendron pallidum.—Poria viticola.—Lycogala Epidendrum.—Helotium citrinum, form confluens.—Peniophora cinera.—Daldinia vernicosa.—Hemitrichia rubiformis.—Radulum molare (?).—Hydnum ochraceum.—Irpex cinnamomeus.—Polyporus dichrous.—Polyporus adustus.—Polyporus brumalis.—Polystictus cinnamomeus.—Irpex lacteus.—Lachnea hemispherica.—Isaria farinosa.—Clavaria stricta.—Hydnum velutinum.—Tubulina cylindrica.—Seismosarca alba.—Eutype spinosa.—Polyporus rutilans.—Thelephora vialis.—Trametes malicola.—Daedalea unicolor.—Fomes applanatus.—Arcyria nutans.—Hypoxylon cohaerens.—Xylaria digitata.—Fomes Ohiensis.—Polyporus gilvus.—Tremella frondosa.—Hypocrea sulphurea.—Peziza badia.—Favolus europaeus.—Phlebia radiata.—Lycoperdon piriforme.

BOYER, REV. A., Maryland:

Polyporus frondosus. — Daedalea confragosa. — Polyporus adustus. — Favolus Europaeus.—Polyporus caesius.—Lentinus ursinus.—Tremella frondosa.—Stereum acerinum.—Phlebia radiata.—Poria fimbriata.—Polystictus hirsutus.—Merulius tremellosus.—Scutellinia setosa.—Hypoxylon atropunctatum.

BRACE, L. J. K., Bahamas:

Trametes hydnoides.—Polyporus lucidus.—Polystictus sanguineus.—Schizophyllum commune.—Polyporus grammicola—Polystictus pinsitus.—Polystictus hirtellus.—Sebacina spongiosa. (See Myc. Notes, p. 779.)—Cantharellus cinnabarinus.—Cordyceps sobolifera. (See Note 650.)—Polystictus ochraceus. (See Note 651.)—Ustulina vulgaris.—Polyporus Radula. (See Note 652.)—Lenzites saepiaria.

BURNHAM, S. H., New York:

Mr. Burnham is a most satisfactory correspondent. His specimens are always nicely selected, abundant in quantity, and accompanied by notes and data as to host that make them of unusual value in the museum. Many of them are as named by Mr. Burnham.

Cudonia circinans.—Geaster rufescens.—Geaster triplex.—Lycoperdon subincarnatum. — Hydnum velutinum. — Xylaria subterranea. — Leotia lubrica.—Helvella elastica.—Mollisia cinerea.—Polyporus cristatus.—Xylaria Hypoxylon.—Hydnum albonigrum.—Hydnum scabriceps.—Hydnum fragile.—Hydnum cyaneotinctum.—Poria ferruginosa.—Polyporus Spraguei.—Thelephora anthrocephala.—Trametes variiformis.—Polyporus holmiensis.—Xylaria corniformis.—Trametes malicola.—Scleroderma tenerum.—Polyporus radiatus.—Thelephora albido-brunnea.—Tremella frondosa. (Will be published in Myc. Notes.)—Sarcosphaeria coronaria. (Will be published in Myc. Notes.)

CHEEL, E., Australia (and neighboring islands):

Stereum illudens.—Daldinia concentrica.—Stereum lobatum.—Xylaria rhophaloides. — Xylaria polymorpha. — Xylaria Hypoxylon. — Fomes Clelandii.—Stereum cinerescens.—Stereum membranaceum.—Polystictus imbricatus. — Lenzites abietinus. — Lenzites flavida. — Cyathus stercoreus. — Lenzites repanda.—Stereum caperatum.—Thelephora radicans.—Poronia oedipes.—Lentinus Sajor-Caju.—Polystictus versicolor.—Stereum villosum.—Auricularia reflexa. (See Note 653.)—Polystictus elongatus.—Polystictus ochraceus. — Urnula camphylospora. — Stereum Kalchbrenneri. — Stereum

vellereum.—Aseroe rubra.—Polyporus eucalyptorum. (See Note 654.)—Polystictus imbricatus. (Will be published in Myc. Notes.)—Stereum hirsutum.—Xylaria ectogramma. (Will be published in Myc. Notes.)—Xylaria laevis. (Will be published in Myc. Notes.)—Lenzites glabra. (Will be published in Myc. Notes.)—Stereum deceptivum.—(Will be published in Myc. Notes.)—Stereum plicatum. (Will be published in Myc. Notes.)—Lenzites Beckleri. (Will be published in Myc. Notes.)—Stereum Phoca. (Will be published in Myc. Notes.)

The following named by Mr. Cheel are not in my line of study. My best thanks for the specimens: Sphaerostilba cinnabarina.—Boletus granulatus.—Actinonema rosea.—Uncinula australiana.—Uromyces caryophyllinum.—Sclerotinia Libertiana.—Ustilago cynadontis.—Parmeliella caerulescens.—Stereocaulon proximum.—Cladonia fragillima.—Heterodea Muelleri.—Parmelia placorhosioides.—Baeomyces fusco-carnea.

CLELAND, J. B., New South Wales:

Polyporus atrohispidus. (Will be published in Myc. Notes.) Polyporus anthracophilus.—Geaster floriformis.—Geaster arenarius.—Irpex consors.—Stereum lobatum.—Stereum sanguinolentum (?).—Stereum membranaceum.—Geaster Smithii.—Crucibulum vulgare.—Geaster triplex.—Cyathus vernicosus.—Tylostoma albicans.—Tylostoma poculatum.—Stereum caperatum.—Stereum vellereum.—Stereum hirsutum.—Polyporus rosettae.—Trametes lilacino-gilvus.—Geaster Clelandii.—Polystictus anomalum. (Will be published in Myc. Notes.)—Chlamydopus Meyenianum. (See Note 655. Very rare.)—Irpex cingulatum. (Will be published in Myc. Notes.)—Polyporus lateratius. (See Note 656.)—Stereum (Hym.) villosum. Stereum spectabile.—Hydnum zonatum.—Lycoperdon pratense.—Fomes applanatus.—Geaster fornicatus. (The true species, rare.)—Polyporus concrescens.—Irpex consors.—Polystictus cinnabarinus.—Polyporus fruticum.—Stereum radiato-fissum.—Polystictus versicolor.—Hydnum ochraceum.—Fomes hemitephrus. (See Note 657).—Stereum illudens.—Trametes cervinus.—Polystictus cervino-gilvus.—Auricularia mesenterica.—Lenzites unguliformis. (Will be published in Myc. Notes.)—Polyporus Patouillardii.—The pseudo-sclerotium of Lentinus fasciatus. (Will be published in Myc. Notes.)—Fomes annosus.—Polyporus rutilans. (See Note 658.)—Polyporus citreus? (See Note 659.)—Stereum rugosum?—Hexagona rigida. (See Note 660.)—Polyporus ludovicianus. (See Note 661.)—Polyporus Albertinii. (See Note 662.)—Polyporus tuberaster. (See Note 663.)—Trametes floccosus. (See Note 664.)—Polyporus myclodes. (See Myc. Notes, p. 773.)—Polyporus scruposus.—Merulius Corium.—Lenzites repanda.—Trametes lactinea. (See Note 665.)—Hexagona tenuis.—Polyporus sordentulus.—Lenzites abietinus.—Fomes Niaouli.—Polyporus gilvus.—Fomes badius.—Schizophyllum commune.—Polystictus occidentalis.—Polystictus luteo-olivaceus.—Fomes robustus.—Polyporus megaloporus.—Lenzites Becklerii.—Polyporus varius.—Polyporus rubidus.—Fomes conchatus.—Lentinus radicatus.—Lentinus strigosus.—Lentinus fasciatus.—Polystictus badius. (See Note 666.)—Fomes setulosus. (See Note 667.)—Polyporus sulphureus.

DEMANGE, V., China:

Phallus indusiatus. (See Note 668.)—Hexagona apiaria.—Hexagona tenuis.—Trametes lactea.—Fomes (Ganodermus) leucophaeus.—Polystictus

xanthopus.—Polyporus pterygodes.—Morchella conica.—Lycogala Epidendrum.—Polyporus Oerstedii.—Lenzites tenuis.—Xylaria papulis. (Will be published in Myc. Notes.)—Trametes Meyenii. (See Note 669.)—Fomes (Gan.) applanatus.—Polyporus velutinosus.—Polystictus occidentalis.—Trametes Persoonii.—Scleroderma sinnamariense. (See Myc. Notes, p. 772.)—Polyporus fusco-lineatus. — Fomes subresinosus. — Cyathus Montagnei. — Hirneola polytricha.—Polystictus versatilis.—Schizophyllum commune.—Polystictus polyzonus.—Lenzites repanda.—Guepinia spathulata.—Polystictus luteo-olivaceus.—Polyporus (Gan.) lucidus.—Cladoderris Thwaitesii. (See Myc. Notes, p. 774.)

DUTHIE, MISS A. V., South Africa:

Scleroderma Cepa.—Scleroderma tenerum.—Polyporus caesius.—Tremella lutescens.—Cyathus Berkeleyanus.—Myriostoma coliformis (rare).—Catastoma anomalum.—Geaster saccatus.—Xylaria rhophaloides.—Polystictus torridus. (See Note 670.)

ESPINOSA, M. R., Chile:

Polyporus frondosus.—Polystictus ectypus.—Geaster pectinatus.—Polystictus fulvicolor (local forms of versicolor).—Polyporus adustus.—Trametes trabea.—Xylaria albomaculata.—Cyathus pygmaeus.—Cyathus vernicosus .— Cyathus striatus. — Merulius Corium. — Scleroderma tenerum. — Aleurodiscus vitellinus.—Stereum (Hym.) villosum.—Tylostoma squamosum.—Stereum vellereum.—Stereum hirsutum.—Poria inermis.—Peziza (Acetabula) leucomelas (?).—Battarrea phalloidea.—Catastoma circumscissum. (See Note 671.)—Mycocitrus (?) sp. (Will be published in Myc. Notes.)—Polyporus dissitus. (See Note 672.)—Tremella fuciformis.—Tremella mellea. (Will be published in Myc. Notes.)—Cyathus vernicosus. (See Note 673.)—Xylaria herculea. (Will be published in Myc. Notes.)

FISCHER, G. L., Texas:

Fomes marmoratus.—Polyporus Curtisii.—Polyporus arcularius.—Hypoxylon atropunctatum.—Polyporus sublilacinus.

FOERSTE, A. F., Ohio:

Gyromitra brunnea.

GEE, N. GIST, China:

Morchella esculenta.—Stemonitis ferruginea.—Stemonitis splendens.—Hirneola auricula-Judae.

GOSSWEILER, JOHN W., Africa:

Fomes roseotubulus. (See Note 674.)—Polyporus Mollerianus.—Stereum (Hym.) tenuissimum.—Trametes cingulatum.—Guepinia spathulata.—Polystictus luteus.—Lentinus Africanus.—Polystictus caperatus.—Polystictus lanatus.—Lentinus Sajor Caju. Lachnocladium Zenkeri.—Cyphella nabambissoensis. (See Note 675.)—Kretzschmaria cetrarioides. (Will be published in Myc. Notes.)—Polystictus xanthopus.—Phallus indusiatus.—Polyporus vinosus.—Stereum Bolleanum.—Lycogala Epidendrum.—Polyporus gilvus.—Polystictus sanguineus.—Trametes protea.—Lentinus fallax. — Polyporus malaiencis. — Craterellus cornucopioides. — Xylaria Mellisii. (Will be published in Myc. Notes.)—Pterula fruticum. (Will be published

in Myc. Notes.)—Favolus fimbriatus. (See Note 676.)—Polystictus Dybowskii. (See Note 677.)—Polyporus Gossweilerii. (See Note 678.)—Mucronella tenuipes. (Will be published in Myc. Notes.)—Tremella fuciformis. (Will be published in Myc. Notes.)—Tricoscypha Hindsii. (See Note 679).—Polystictus flavus. (See Note 680.)—Auricularia Moellerii. (Will be published in Myc. Notes.)—Stereum Bresadoleanum. (See Note 681.)—Polystictus occidentalis.—Geaster mirabilis.—Polyporus lignosus with yellow context. (See Note 682.)—Polystictus xanthopus.—Polyporus salebrosus. (See Note 683.)—Pterula Mannii. (Will be published in Myc. Notes.)—Xylaria Ridleyi. (Will be published in Myc. Notes.)—Lasiosphaeria Fenzlii. (See Note 684.)—Merulius similis. (See Note 685.)

GOWDEY, W., Africa:

Xylaria nigripes. Sclerotium from which the fungus is developed. I should be much pleased to get the Xylaria that develops from these sclerotia, as I have never gotten the fruiting plant, although it seems common in the region of ant hills, in the tropics.

GRANT, J. M., Washington:

Hypochnus vagus.—Polyporus distortus.—Poria ferruginosa.—Fomes Laricis. — Polyporus adustus. — Merulius tremellosus. — Lycoperdon piriforme.—Fomes (Gan.) applanatus.—Ozonium auricomum.—Lycoperdon piriforme.—Thelephora palmata.—Xylaria Hypoxylon (conidial).—Polystictus abietinus.—Polystictus Macounii.—Guepinia occidentalis.—Tremella viscosa?—Polystictus cuneatus.—Polyporus alboluteus. (See Note 686.)

GRIFFIN, D. B., Vermont:

Polyporus cuticularis.—Polyporus brumalis.—Reticularia Lycoperdon.—Ustulina vulgaris.—Cyathus striatus.—Urnula Craterium.—Polyporus brumalis. — Polyporus (Gan.) lucidus. — Lycoperdon gemmatum. — Clitopilus abortivus.—Peziza scutellata.—Hypoxylon coccineum.—Polyporus cristatus. — Hydnum cyaneotinctum. — Polystictus perennis. — Xylaria polymorpha. (See Myc. Notes, p. 768.)—Hemitrichia clavata?—Peziza badia.—Chlorosplenium versiforme.—Polyporus Schweinitzii.—Polystictus circinatus.—Polyporus mollis. (See Note 687.)

HADLEY, MRS. A. M., Vermont:

Hydnum fimbriatum. (See Myc. Notes, p. 753.)—Collybia acervata.

HINCKLE, FRED, Ohio:

Mutinus elegans, growing on a lawn. It usually occurs in rich humus in the woods.

JOHNSTON, I. M., California:

Catastoma subterraneum.—Trametes hispida.—Tylostoma campestre.—Merulius lacrymans.—Geaster triplex.—Bovistella dealbata.—Polyporus volvatus.—Lycoperdon Hungaricum (? if distinct from pusillum).—Cyathus vernicosus.—Polyporus lacteus.—Polyporus corruscans. (See Note 688).—Polysaccum pisocarpium.—Scleroderma flavidum.—Scleroderma Geaster.—Bovista plumbea.—Morchella esculenta.—Polyporus gilvus.—Polystictus perennis.—Polyporus dichrous.

JONES, KATE A., New Hampshire:

Daedalea confragosa, lenzitoid.—Xylaria corniformis.—Fomes leucophaeus.—Stereum fasciatum.—Polyporus betulinus.—Daedalea unicolor.—Fomes fomentarius.—Lenzites saepiaria.—Panus stipticus.—Trogia crispa.—Favolus europaeus.—Polystictus hirsutulus.—Polystictus versicolor.—Lenzites betulina.

LATHAM, ROY, New York:

Polyporus trabeus.—Polyporus sulphureus.—Merulius brassicaefolius.—Stereum fasciatum.—Stereum albo-badium.—Hypoxylon multiforme (?).—Polystictus cinnamomeus.—Stereum sericeum.—Polyporus (Gan.) Curtisii (rare so far north).—Crepidotus applanatus.

LEEPER, B., Ohio:

Lenzites saepiaria.—Polyporus graveolens.—Lentinus ursinus.—Polyporus albidus.—Fomes conchatus.—Fomes igniarius.—Polyporus galactinus.—Polystictus versicolor.—Polyporus tephroleucus.—Polyporus trabeus.—Hydnum Morganii (rare).

LEWIS, J. E. A., Japan:

Polyporus volvatus. (See Note 689.)—Daedalea unicolor.—Auricularia auricula-Judae.—Polyporus dichrous.—Lenzites betulina.—Lenzites subferruginea.—Polyporus arcularius.—Boletinus paluster.—Trametes purpurea.—Fomes densus (thick form of conchatus).—Polystictus elongatus.—Lycoperdon Wrightii.—Polyporus amygdalinus. (See Note 690.)—Xylaria fusca. (See Myc. Notes, p. 770.)—Poria vitellina.—Exidia Uvapassa. (See Myc. Notes, p. 774.)

McDOUGAL, W. B., Illinois:

Panus strigosus. (See Note 691.)—Cordyceps Melolanthae.

McFARLAND, FRANK T., Kentucky:

Lycoperdon gemmatum. — Lycogala Epidendrum. — Lycoperdon piriforme.—Bovista plumbea.—Auricularia auricula-Judae.—Stereum sericeum.—Polystictus galactinus.—Peziza pustulata (?)—Hydnum septentrionale.—Polystictus versicolor.—Calvatia lilacina.

McFARLAND, FRANK T., Michigan:

Tremellodendron pallidum.—Geaster hygrometricus.—Polyporus sessilis.

MAC INNES, JEAN, Minnesota:

Polystictus elongatus (rare and probably introduced so far north).—Stereum rubiginosum.

MERRILL, E. D., Philippine Islands:

We have had on hand for more than a year a large collection of specimens sent through the kindness of Mr. Merrill. We had delayed reporting on them, hoping to get time to write a résumé of the Philippine fungus situation, which, as yet, we have not done. As this letter goes to press, another large shipment, as yet unopened, has been received.

The following are a few of the specimens received.

Polystictus occidentalis.—Fomes melanoporus.—Polystictus florideus.—

Fomes rimosus.—Polystictus flabelliformis var. Japonicus.—Polyporus affinis.—Polystictus microlomus.—Polystictus xanthopus.—Fomes subresinosus. — Fomes adamantinus. — Polyporus (Gan.) dorsalis. — Polyporus (Gan.) ochrolaccatus.—Polyporus (Amaur.) rugosus.—Hexagona durissima. —Polystictus versatilis.—Lenzites repanda.—Polyporus anebus.—Laschia (or better, Auricularia) intestinalis. (See Myc. Notes, p. 708.)—Fomes lamaensis.—Polyporus dictyopus.—Polyporus zonalis.—Trametes cingulatum. Polyporus vinosus.—Polyporus semilaccatus.—Hexagona resinaceus.—Polystictus sanguineus.—Polystictus Persoonii.—Polystictus tabacinus.—Polystictus luteus.—Polyporus Menziesii.—Polyporus rubidus.—Polyporus bruneolus.

MILLE, REV. LOUIS, Ecuador:

Cyclomyces fuscus. (Will be published in Myc. Notes.)—Stereum tenebrosum. (See Note 692.)—Auricularia auricula-Judae.—Polystictus polyzonus.—Polyporus gilvus.—Polyporus concrescens.—Polystictus versicolor. —Trametes cervina. (See Note 693.)

NÚÑEZ, GABRIEL M., Ecuador:

As illustrating the wide distribution of fungi, we have nine fine collections from Núñez from Ecuador. Every one of them is frequent in the United States (four from the South) and five of them could have been collected around Cincinnati. And yet Spegazzini finds more (so-called) "new species" in South America than he does "old species"!!

Polyporus lucidus, with yellow pore mouths. (See Note 694.)—Lenzites repanda.—Polystictus occidentalis.—Stereum lobatum.—Schizophyllum commune.—Polystictus polyzonus.—Lentinus betulinus.—Guepinia spathularia. —Scleroderma tenerum.—Lentinus strigosus.—Polystictus sanguineus.— Polystictus haedinus.

O'CONNOR, C. A., Mauritius:

Cyathus Berkelyanus.—Pseudocolus Mauritianus.—Isaria sphaecocephala. (See Myc. Notes, p. 778.)

O'CONNOR, C. A., South Africa:

Tylostoma cyclophorum.

OLESON, O. M., Iowa:

Polyporus (Gan.) oregonensis. Collected in Virginia. (See Note 695.) —Polyporus giganteus.—Fomes applanatus.—Trametes robiniophila.—Sarcoscypha coccinea.—Hydnum Schiedermayeri.—Polyporus corruscans.

PAIGE, F. W., Iowa:

Polystictus elongatus. (See Note 696.)

PATTERSON, MRS. FLORA W., District of Columbia:

Rhizopogon rubescens.

PAUL, J. T., Australia:

Daldinia concentrica.—Polystictus cinnabarinus.—Polyporus arcularius. — Stereum vellereum. — Stereum Kalchbrenneri. — Polyporus inaequalis. Will be published in Myc. Notes.)—Trametes lilacino-gilvus.—Stereum Thozetii. (See Note 697.)

RHOADS, A. S., District of Columbia:

Polystictus pargamenus. A number of collections from various locations, showing the variation that this plant takes. Mr. Rhoads is working on a monograph of the species. We hope he will definitely distinguish the various forms that it takes.

RICK, REV. J., Brazil:

Septobasidium crinitum.—Merulius Corium.—Calvatia Gardnerii. (See Note 698.)—Fomes (Gan.) gibbosa.—Camillea Bomba. (See Myc. Notes, p. 778.)—Xylaria gracillima. (See Myc. Notes, p. 771.)—Hexagona mirabilis. (See Note 699.)—Arachnion album.—Favolus multiplex.

The following are mostly named by Rev. Rick: Lepiota Badhamii.—Lepiota farinosa.—Lepiota squarrosa var. vermiculosa.—Stropharia Caput-Medusae.—Sarcosoma Moellerianum.—Uropyxis Rickiana.—Polyporus terebrans.—Polyporus resinaceus.—Xylaria corniformis.—Polyporus depressus.—Camillea globosa. (Will be published in Myc. Notes.)—Favolus dermoporus. (See Note 700.)

RODWAY, L., Tasmania:

We are glad to get Mr. Rodway interested in collecting, for we have noted at Kew several most curious species that he sent years ago to Massee, and we have always felt that Massee did not do justice to them.

Merulius Corium.—Xylaria tuberiformis (?).—Xylaria rhophaloides.—Xylaria castorea.—Xylaria corniformis.—Urnula campylospora.—Polyporus rugosus. — Polystictus brunneo-leucus. — Hypocrea sulphurea. — Leotia lubrica.—Cyttaria Gunnii.—Geoglossum nigritum.—Daldinia concentrica.—Polyporus pocula. (See Note 701.)—Fomes applanatus.—Geoglossum Walteri. (See Note 702.)

SCARFE, W. A., New Zealand:

Merulius Corium var. pallens. (See Note 703.)—Schizophyllum commune.—Geaster saccatus.—Polyporus setiger. (See Note 704.)—Fomes Clelandii. (See Note 705.)—Geoglossum glutinosum.—Nidula microcarpa.—Lycoperdon cepaeforme.—Phallogaster globosus. (See Myc. Notes, p. 739.)—Crucibulum vulgare.—Secotium erythrocephalum.

SILVEIRA, A. A. De, Brazil:

Calvatia lilacina.—Lentinus stuppeus.—Polyporus licnoides.—Polystictus sanguineus.—Polystictus lenis. (See Note 706.)

SIMMONDS, J. H., Australia:

Lysursus Gardneri.—Schizophyllum commune.—Stemonitis splendens.—Marasmius calobatis (?).—Geaster plicatus.—Geaster saccatus.—Clathrus pusillus. (We should like much a photograph of the fresh plant.)

STEVENSON, JOHN A., Porto Rico:

The first ten specimens as determined by Prof. Burt. Corticium vesiculosum.—Corticium pallescens.—Stereum fasciatum.—Corticium investiens.—Corticium contiguum.—Stereum tuberculosum.—Stereum umbrinum.—Stereum papyrinum.—Peniphora flavido-alba.—Hymenochaete rubiginosa.—Fomes linteus.—Clathrus crispus.—Xylaria euglossa.—Poria aurantiotingens.

STOCKER, DR. S. M., Minnesota:

Helotium citrinum.—Dacryomyces palmata (rare).—Trametes pusillus. (See Myc. Notes, p. 774.)—Polyporus adustus.—Cenangium furfuraceum.—Phlebia radiata. (See Note 707.)—Fomes marginatus. (See Myc. Notes, p. 775.)

STOWARD, F., West Australia:

Hexagona Gunnii.—Polyporus ochroleucus.—Schizophyllum commune.—Stereum hirsutum.—Polystictus cinnabarinus.—Tylostoma McAlpianum.—Lentinus fasciatus.—Polyporus oblectans.—Polyporus gilvus.—Fomes rimosus.—Fomes badius.—Fomes robustus.—Scleroderma cepa.—Secotium acuminatum (rare in Australia).—Polyporus decipiens.—Fomes Robinsoniae.—Stereum illudens.—Polyporus atrohispidus. (Will be published in Myc. Notes.)

SWANTON, E. W., England:

Polyporus dryadeus.—Fomes annosus.—Polyporus tephroleucus.—Lycoperdon spadiceum.—Lycoperdon umbrinum.—Calvatia saccata.—Stereum Mougeotii. (See Note 708.)

TORREND, REV. C., Brazil:

Xylaria tuberculosa. (See Myc. Notes, p. 769.)—Polystictus hexagonoides.—Polyporus megaloporus. (See Note 710.)—Fomes Caryophylli.—Camillea Bomba.—Polystictus rigens.—Polyporus lucidus.—Xylaria stromatica. (See Myc. Notes, p. 770.)—Rimbachia pezizoideus.—Polystictus tenuis.—Trametes argyropotamica. (See Myc. Notes, p. 772.)—Trametes Persoonii.—Polyporus conchatus.—Fomes lignosus.—Fomes lamaensis.—Trametes ocellata.—Lentinus velutinus.—Polyporus conchoides.—Polyporus licnoides.—Fomes hornodermus.—Camillea ? sulcata. (See Myc. Notes, p. 771.)—Poria (Trametes) serpens.—Fomes senex.—Lenzites erubescens.—Xylaria Wettsteinii (?).—Stereum diaphanum.—Pyrenopolyporus Hunteri.—Xylaria polymorpha?—Xylaria cubensis.—Xylaria scruposa.—Xylaria anisopleura.—Xylaria rhopaloides.—Tricoscypha Hindsii.—Lycoperdon tephrum.—Stereum aurantiacum.

TSOU, P. W., China:

Phallus gracilis (which is the slender form of Phallus rubicundus).

UMEMURA, J., Japan:

Trametes purpurea.—Polystictus sanguineus.—Irpex Tanakae.—Stereum Burtianum.—Polyporus sulphureus.—Cordyceps ophioglossoides (*on a locust*). Will be published in Myc. Notes.)—Calvatia versispora. (See Note 711.)

WEIR, JAMES R., Idaho:

Sphaerobolus stellatus.

WEIR, JAMES R., Indiana:

Hydnum pulcherrimum.—Polyporus mutabilis. (A very northern station for this species.)—Irpex pachylon.

WEIR, JAMES R., from Java:

Polystictus luteus.—Polyporus (Gan.) dorsalis.—Polystictus cryptomeniae.

WEIR, JAMES R., Montana:

Hydnum Caput Ursi.—Lenzites corrugata.—Secotium pedunculatum. (Will be published in Myc. Notes.)

WEIR, JAMES R., from Peru:

Polyporus Rickii.

WHETSTONE, DR. MARY. Minnesota:

Polystictus elongatus. (Same as mentioned in Note 696.)

YASUDA, PROF. A., Japan:

Irpex tabacinoides. (See Note 712.)—Polyporus fuscus.—Polystictus caesio-glaucus. (See Note 713.)—Polyporus frondosus.—Trametes serialis. —Poria ferruginosa.—Polystictus venulosus.—Tremella frondosa.—Merulius lacrymans.—Auricularia auricula-Judae.—Cyclomyces fuscus.—Polystictus illicicola.—Armillaria giganteus (as named by Yasuda).—Polyporus griseus.—Isaria atypicola.—Tricholoma Shiitaki. (See Note 714.)—Isaria Cosmopsaltriae. (Will be published in Myc. Notes.)—Polyporus Tsunodae. (Will be published in Myc. Notes.)—Lenzites betulina.—Polyporus radiatus. —Corticium caeruleum.—Poria versipora.—Irpex Kusanoi.—Irpex Tanakai. —Hydnum zonatum.—Hydnum concrescens.—Irpex decurrens.—Radulum mirabile.—Cantharellus floccosus.—Stereum lilacino-fuscum. (See Note 715.)—Hydnum Blackfordae. (See Note 716.)—Hypoxylon viride. (See Note 717.)—Panus tahitensis. (See Note 718.)

ZELLER, S. M., Missouri:

Those marked with a star were collected in Washington. Stereum fasciatum.—Trametes malicola.*—Radulum orbiculare.—Stereum purpureum.* —Stereum hirsutum.*—Naematelia encephala.* (See Note 719.)—Polyporus Spraguei.—Polystictus Macounii.*—Stereum (Hym.) rubiginosum.— Stereum sericeum.—Polystictus versicolor.—Cyathus stercoreus.—Lenzites betulina.—Lycoperdon piriforme.—Polyporus adustus.—Scleroderma vulgare.—Stereum albobadium.—Hypocrea sulphurea.—Polyporus (Gan.) sessilis.—Thelephora regularis.—Trametes sepium.—Irpex obliquus.—Irpex pachylon.—Hydnum pulcherrimum.—Lycoperdon piriforme.—Fomes connatus.—Trametes piceinus.*

ZENKER, G., Africa:

Auricularia auricula-Judae.—Xylaria pallide-ostiolata. (Will be published in Myc. Notes.)—Xylaria nigrescens.—Daldinia albozonata. (Will be published in Myc. Notes.)

ZIMM, LOUIS A., New York:

Poria pulchella.—Polyporus adustus.—Stereum fasciatum.—Polystictus pargamenus.—Lenzites corrugata.—Polystictus hirsutus.—Irpex laeticolor. —Lenzites betulina.—Polyporus gilvus.—Polystictus biformis.—Polyporus valenzuelianus.—Trametes malicola.—Merulius incarnatus.—Lenzites saepiaria.

NOTE 648. **Secotium erythrocephalum, from W. E. Barker, New Zealand.** We are always glad to get this elegant little species, and it comes to us often from New Zealand, but never from Australia. The habitat is given in the "Handbook" as "on the ground" and that has always been our impression, but among these from Mr. Barker is one growing on a stick.

NOTE 649.—**Battarrea phalloides, from Chas. G. Benson, Nevada.** The plants of the genus Battarrea are sand-loving and would naturally be expected to be found in the sandy regions of our western states. However, this is the first collection excepting from the Pacific coast. Mr. Benson found it at Fallon, Nevada, and it was sent to us through the kindness of his father, Mr. Berry Benson, of South Carolina. We formerly received a great many specimens from Berry Benson but he does not send us as many now as he ought considering the favorable region in which he resides.

NOTE 650.—**Cordyceps sobolifera, from L. J. K. Brace, Bahamas.** A fine collection. Mr. Brace must find it fairly common. We illustrated it (Myc. Notes, p. 584) from a plant of his previous sending. Thanks to his liberality we now have abundant specimens in our museum. We did not note a single specimen in any museum in Europe.

NOTE 651.—**Polystictus ochraceus, from L. J. K. Brace, Bahamas.** This is a species we do not get very often, though we have a dozen collections so labeled. Our best specimens are from South Africa. It is supposed to have been named by Persoon, but it is rare in Europe. Its character is the soft, velvety surface hairs, about honey yellow of Ridgway, and no zones. The specimens from Bahamas have more yellow pores and context than South African plants, and the context turns pinkish on touch of alkali. I do not note this on the African plant. We might call it a "new species" on this feature, but I hardly think it advisable to begin making "new species" on chemical tests.

NOTE 652.—**Polyporus Radula, from L. J. K. Brace, Bahamas.** Sessile, dimidiate, applanate, an inch thick by three to four broad, white, dirty, sordid, when dry. Surface no distinct crust, rough, uneven. Context white and hard. Pores white, minute, round; cystidia none. Spores allantoid, 2 x 8, hyaline.

We do not favor publishing isolated descriptions, nor do we wish to fill our museums with unnamed specimens; hence we give it a name. To the eye this is the same as Polyporus Spraguei, and without microscopic examination, one would so refer it. The spores, however, are entirely different, which is the only point that I can note in which it differs at all.

NOTE 653.—**Auricularia reflexa, from Edwin Cheel, Australia.** We have heretofore called this Phlebia strigoso-zonata, in keeping with those sacred laws of priority, but the specific name reflexa given it by Berkeley is much better. It was named by Berkeley (four times), also once each by Cooke, Massee, Schweinitz, Léveillé, Cesati, and Peck, so there are a variety of names to choose from. (Cfr. Letter No. 46.) The genus is what bothers. The basidia are not clavate like a Phlebia, but cylindrical like an Auricularia, but it is not a tremellaceous plant, hence embarrassing to put in a tremellaceous genus. It is neither a Stereum, a Phlebia nor for me an Auricularia, but we do not want to begin the "new genus" business on old plants.

NOTE 654.—**Polyporus eucalyptorum, from Edwin Cheel, Australia.** To the eye same as our Polyporus betulinus, hence I may be excused for so referring it when I first began to receive it from Australia some years ago. The spores (8-12 subglobose) are entirely different. We recorded them 2½ x 6 in Polyporus betulinus, but we make them now allantoid, curved, not over 1 x 6.

NOTE 655.—**Chalmydopus Meyenianus, from Dr. J. Burton Cleland, N. S. Wales.** This is a rare but characteristic plant, growing in the sand, and this the first specimen received by me from Australia and the second collection known from this country. The other from Gascoyne River, at Kew, is labeled "Tylostoma maximum." The species though infrequent is widely distributed. The first good account of the plant was given by C. V. Piper in Mycological Notes, p. 134, and illustrated on Plate 10.

I think the following are all the collections known. From the United States four collections, three from New Mexico and one from Washington. Two of these are in our museum. From South America the type from Peru named Tylostoma Meyenianum is at Berlin. Spegazzini records it from Argentine as Chlamydopus clavatus, and reports it common. At Kew there is an old, effete specimen from "The Egyptian dessert" misreferred as a Battarrea. Total—nine records now known for the entire world.

NOTE 656.—**Polyporus lateritius, from Dr. J. Burton Cleland, N. S. Wales.** Entire plant orange rufous. Pileus sessile, 3 to 5 inches broad, ½ inch thick, with thin margin. Surface uneven. Context bright orange rufous, firm. Pores large, with thin walls, unequal, irregular. Cystidia none. Spores abundant, subglobose 6-7 mic., hyaline. When I first saw this specimen I thought of Polyporus laetus named, but scantily known, from one specimen at Kew from Australia. On comparison it differs markedly in its large, angular pores. The pores of Polyporus laetus are minute, although described as "medium." But one other "orange" Polyporus has been named from Australia, viz: Fomes pyrrhocreas, now known to be same as Fomes Kermes, a very common plant in the Philippines (Cfr. Fomes Syn., p. 231). I believe there is but one collection of Fomes Kermes known from Australia, and I have never gotten it excepting from Philippines.

Polyporus lateritius has the same color and pores as Polyporus aurantiacus of the United States and Europe. It is quite different however, in texture, being hard and firm, much larger, and the spores entirely different.

When Cooke named Fomes lateritius from South America, he called it Polyporus lateritius, but that was many years ago, and Cooke and every one else for the last thirty years has called it Fomes lateritius. Some future nomenclatural purist may claim that it is a bar

to using the name for the Australian species now, and propose to change it. People are beginning to see through the trickery of such cheap proposals nowadays, however, and there is not as much chance as at one time.

NOTE 657.—**Fomes hemitephrus, from Dr. J. Burton Cleland, N. S. Wales.** A practical way to distinguish Fomes hemitephrus from Fomes hornodermus is not clear to me. The orange stain under the crust pointed out in Note 300, while usually a prominent feature, is not always in evidence. I note that Fomes hemitephrus turns reddish when touched with alkali but hornodermus responds to the same test. I think hermitephrus typically (Cleland No. 165 and 166) has a softer and not so white context and orange coloration under crust, but these specimens do not, and still they must be hemitephrus.

NOTE 658.—**Polyporus rutilans, from Dr. J. Burton Cleland, N. S. Wales.** This Australian plant is so different from the European plant that when I first saw it, the European species was not suggested to my mind, although I know our plant so well I name it on sight and have perhaps a hundred collections. But our plant has brown context and the color of this context is pale with a yellowish cast. A touch of alkali at once turns it red, a chemical test to which very few species respond. When I compare it with our plant I find a different surface, and a much different context color, and yet I am convinced it is the same species. Species are made up of the general characters, not a single difference. No one referring species on general appearances would ever refer this collection to Polyporus rutilans.

NOTE 659.—**Polyporus citreus, from Dr. J. Burton Cleland, N. S. Wales.** This "species" has been known from Australia since 1860, from a little type at Kew about the size of your thumb nail (Cfr. Apus. Pol., p. 355). On two occasions Dr. Cleland has sent scanty collections that may be this species. It is a yellow plant the color of amber yellow of Ridgway. Yellow polypores are rare enough to be noteworthy. If we correctly refer this, we are in error in the section in which it was placed in our pamphlet. It does not go in the section with Polyporus rheicolor with colored spores, for while we find no spores, they are surely hyaline.

NOTE 660.—**Hexagona rigida and Hexagona similis, from Dr. J. Burton Cleland, N. S. Wales.** We are getting these two species abundantly from Australia, and they are quite distinct in the color of the context; which is brown in the former and pale isabelline in the latter. Both are marked with strong fibrillose, scrupose surface. The pores vary in size, but we do not attach so much stress to that as we do to the context color. We confused these two species in our Hexagona pamphlet.

NOTE 661.—**Polyporus ludovicianus, from Dr. J. Burton Cleland, N. S. Wales.** This I think is really a thick form of Polyporus cuticularis, and was named from our Southern United States. In my Apus Polyporus pamphlet I referred it (as also fusco-velutinus of same author) to Polyporus cuticularis. It is a more robust, thicker plant, and the surface hairs are more velutinate. The spores subglobose 4-5 are some smaller. Recently it had been called also Polyporus agrocuticularis from Africa. I get it sometimes from our Southern states and have always referred it to Polyporus cuticularis. In addition the Australian plant has a harder texture and smaller pores, and perhaps merits a special name.

NOTE 662.—**Polyporus Albertinii, from Dr. J. Burton Cleland, N. S. Wales.** (Cfr. Stipitate Polyporoids, Page 160.) This has same surface, color, texture and spores as Polyporus hispidus, and is perhaps a stalked form of it. Polyporus hispidus, however, in this country or Europe never has a stalk. We know now that the related Polyporus Schweinitzii sometimes is sessile and sometimes has a stalk according to its habitat, on the ground, or on a log. Perhaps this is a similar case, and that in Australia, Polyporus Albertinii is the stalked form of Polyporus hispidus. Although Cooke records it, I have never gotten Polyporus hispidus from Australia.

NOTE 663.—**Polyporus Tuberaster, from Dr. J. Burton Cleland, N. S. Wales.** This grew in a dry swamp attached to a black, hard pseudosclerotium, and we find on comparison it is same as the celebrated Italian species which is cultivated for food in Italy. We gave in our Ovinus pamphlet, pages 74. 92 and 93, an account of its history in Europe. This is the first time to my knowledge that the species has been collected, excepting in Southern Europe, where it is now getting very rare. There is a record of it in Japan, but we have seen no specimen, and its occurrance in Japan is, for us, not certain.

NOTE 664.—**Trametes floccosus, from Dr. J. Burton Cleland, N. S. Wales.** We refer this to the Ceylonese species, although on comparison the context and surface colors are similar but notably darker. It has same texture, spores, and pores however. This is the first time it has been collected, excepting in Ceylon. It was named as Trametes, where it is probably best classified, although we included in our Fomes pamphlet (p. 220) as the Ceylonese specimen we had from Prof. Petch had distinct pore layers. The spores (abundant) are 6-7 x 12-14.

NOTE 665.—**Trametes lactinea, from Dr. J. Burton Cleland, N. S. Wales.** Dr. Cleland records that the fresh pores turn reddish when bruised. I never suspected it from the dried specimens. This is the most frequent, white Trametes of Australia and the East.

NOTE 666.—**Polystictus badius, from Dr. J. Burton Cleland, N. S. Wales.** This is much thinner than the usual Eastern plant, but otherwise appears the same to me. It compares closely to the original from Philippines. A thicker plant called Trametes badia is more common in the Philippines (Cfr. Note 462) which seems same except in thickness.

NOTE 667.—**Fomes setulosus, from Dr. J. Burton Cleland, N. S. Wales.** Dr. Cleland writes that this plant occasionally has setae, and that he cannot always distinguish between

it and Fomes robustus. This is much in line with our recent record, Mycological Notes, page 718. We are convinced now that Fomes Robinsoniae (Fomes pamphlet, p. 234), Fomes squarrosus (p. 247) and Fomes setulosus (p. 243) are all the same. We shall call it the latter name, as the best. And furthermore, it is simply a seta-bearing form of Fomes robustus of Europe.

NOTE 668.—**Phallus indusiatus, from Victor Demange, China.** This is the common Phalloid throughout the tropics. It occurs in many countries. (Cfr. Phalloid Synopsis.) Monsieur Demange informs me that this Phalloid is eaten by the Chinese. I think I have published somewhere a note to the same effect. The Chinese esteem it very highly and offer it for sale in packages tied with red tape, as a mark of its high value. They eat it in soups after having cooked it in several changes of water, which they throw away. Monsieur Demange also informs me that Morchella conica and Schizophyllum commune are eaten in China. The latter appears to me as too tough for food.

NOTE 669.—**Trametes Meyenii, from V. Demange, China.** We have heretofore used the name Trametes obstinatus for this plant, although as we stated (Myc. Notes, Page 723) we had not much faith in such a common plant being found as a "new species" by Cooke at such a late date. The type at Berlin was endorsed as being Trametes occidentalis and we supposed correctly, but we now note the original description states "context white" hence it cannot be occidentalis. Klotzsch gave a very good description of this common species.

NOTE 670.—**Polystictus torridus, from Miss A. V. Duthie, South Africa.** We refer this with considerable doubt. Polyporus torridus was named from Africa, and the type is at Kew. We have no photograph of it, and have forgotten exactly what it is. This is the first collection we have gotten. It is close to occidentalis but has darker context. It is close to helveolus (Note 458) but has more strongly hirsute surface.

NOTE 671.—**Catastoma circumscissum, from Marcel R. Espinosa, Chile.** Some day we hope to write a biography of this species. Every man who ever worked on "puff balls" has discovered it to be a new species, and it has over twenty different names. The following are its names from South America: Berkeley called it, from Argentina, Bovista cervina and Spegazzini admits that he named it Bovista uruguayensis; Montagne records it in Gay's Historia Chile as Bovista cervina, but referred it to "Bovista pusilla" from Brazil; Patouillard called it Bovista argillacea from Brazil. The color of the peridium of this specimen is darker than our usual color, but it is the same species.

NOTE 672.—**Polyporus dissitus, from Marcel R. Espinosa, Chile.** This can be described in a few words as being thin Polyporus adustus with blacker pores. It was named from Ceylon, and in my pamphlet was referred to Polyporus adustus. The black pores contrast with the white flesh. I do not know, however, if they are black when fresh. The pores of Polyporus adustus are usually dark, but not as black as this. Cooke named a specimen from New Zealand, Polyporus Curreyanus (Berk, Mss.), which is same as Polyporus dissitus. But why named Curreyanus? What did Currey have to do with it He misnamed some plants from India and some from Africa, but I do not think he had any thing to do with New Zealand specimens.

NOTE 673.—**Cyathus vernicosus, from Marcel R. Espinosa, Chile.** This is another collection of historical interest on account of the locality. Tulasne maintained this Chilean plant as a valid species under the name Cyathus dasypus, originally a name applied to some species from South Africa, which I think is the same as Cyathus vernicosus. I do not see how it differs from the European plant. Same large peridioles. Same spores about 8 x 12, although they average smaller in the Chilean collection. The cups are more brown, but in all essential features it is same as the common European species.

NOTE 674.—**Fomes roseotubulus, from John Gossweiler, West Africa.** Pileus thin, hard, with dark, rugulose surface. Context sepia brown. Pores minute, concolorous, with rose colored mouths, velutinate to touch. Setae none Spores abundant, very small 2-3 mic. colored. Close to Fomes fastuosus as to shape, but entirely different context color. Close to Fomes McGregori, but differs in habits and small spores.

As we read this over in type, we suspect it is Fomes calignosus which agrees excepting the small spores are hyaline in Fomes calignosus. That is the one difference, but that is a good deal.

NOTE 675.—**Cyphella nabambissoensis, from John Gossweiler, West Africa.** Spores globose, 4 mic. Basidia seen plainly. Pure white, glabrous, pendulose. Seventeen "species" of Cyphella have been recorded from Africa mostly as "new." This by Hennings with an Ethiopian name seems to be the only one that any way fits it. It is unfortunate if it is true.

NOTE 676.—**Favolus fimbriatus, from John Gossweiler, West Africa.** This is named from South America. It is very close to Favolus Braziliensis and is pure white when fresh. It turns alutaceous in drying and is thinner.

NOTE 677.—**Polystictus Dybowskii, from John Gossweiler, West Africa.** Named from Africa as Hexagona. Certainly it is a Polystictus and goes in same section as Polystictus cervino-gilvus.

NOTE 678.—**Polyporus Gossweilerii, from John Gossweiler, West Africa.** Pileus 7-8 cm. in diameter, glabrous, dark brown, with rugulose zones, not laccate. Stipe lateral 12-14 cm. long, one cm. in diameter, with similar crust as pileus. Context pale. Pores minute, round, with white mouths. Spores 6 x 8 mic., strongly truncate, smooth. This belongs to Section 2 of our pamphlet, and is one of the few in the section that does not have a laccate surface. Compared to Polyporus dubiocochlear, which is the only species it approximates, it differs by its pale and light context, white pore mouths and smaller pores. A single specimen are sent which appears to have grown horizontally.

NOTE 679.—**Tricoscypha Hindsii, from John Gossweiler, West Africa.** This is a conspicuous Peziza in many warm countries. There is no doubt it was named Peziza Afzelii by Fries from South Africa. I have other specimens from Samoa, C. G. L.; Jamaica, Wm. Cradwick; Java, Dr. Bernhard.

The name Tricoscypha is said to be untenable and Pilocratera and Cookeina have been proposed for it. I know but little about Pezizas but it seems to me better called Sarcoscypha.

NOTE 680.—**Polystictus flavus, from John Gossweiler, West Africa.** These are bright yellow but it is not always easy to decide between Polystictus flavus and Polystictus cervino-gilvus, as the latter is yellow when young. They are similar under the microscope, both having abundant hyaline or pale colored cystidia. In cervino-gilvus the cystidia are more specialized. Polystictus flavus is often irpicoid and has been called Irpex flavus, but for me it is a Polystictus.

NOTE 681.—**Stereum Bresadoleanum, from John Gossweiler, West Africa.** These are the first specimens we have received. We named it from specimens we saw in the museum at Berlin (Cfr. Stip. Ste., page 41). The description needs some corrections. The color is tawny when young, but becomes dark over the older portion. The surface is not "smooth" but minutely pubescent, and marked with narrow zones. The metuloids are numerous, sharp, mostly imbedded only the points protruding. They are not as rough as those of Stereum involutum. We are most glad to get the specimens, as they fix the species in our mind. It seems, however, not to be rare in Africa, and has been misrecorded several times as Stereum bellum.

NOTE 682.—**Polyporus lignosus with yellow context, from John Gossweiler, Portuguese West Africa.** When we published this we gave the color of the context as "white, becoming yellowish in old specimens." These are freshly collected plants and context color is almost bright yellow. I doubt if it was ever white, in these specimens at least. We collected this species abundantly in Samoa, but we have forgotten what its context color was when fresh.

NOTE 683.—**Polyporus salebrosus, from John Gossweiler, Portuguese West Africa.** This which was named in Letter 42, 1912, was illustrated in Myc. Notes, Page 694. It is the fourth collection we have gotten, all from tropical Africa. It has a long, rooting stem, and we supposed it grew in the ground, but Mr. Gossweiler records it "on rotten wood." Mr. Gossweiler sends one very large specimen, and another collection (66) of small specimens.

NOTE 684.—**Lasiosphaera Fenzlii, from John Gossweiler, Portuguese West Africa.** This was sent with a note—"It is reported to occur on the trunk of a palm in the Libolo country at Loanda." That is an error, however, for it is the gleba of a "puff ball" known as "The Giant Puff Ball of the East." An account is given of it on Page 191 of Mycological Notes. It grows a foot or more in diameter and when ripe the fragile peridium falls away and the tough gleba mass (such as sent) is blown and rolls around dispersing the spores.

When I began work on the "puff ball" subject there was but one specimen known. That was in a museum at Vienna, and was picked up on a voyage (around the world) of the Novara, and published in 1870. I since found a specimen (unnamed) in the museum at Leiden, from Sumatra, and I have received specimens from Japan, India and Ceylon. It is, therefore, now known from five different Eastern countries, but as far as known does not occur in American tropics.

NOTE 685.—**Merulius simillis, from John Gossweiler, Portuguese West Africa.** I took these specimens for Merulius lacrymans when I saw them, but the smaller spores, mostly 3-4 (rarely 5 mic.) drew my attention. I still think it is the small spored tropical form of Merulius lacrymans. Mr. Gossweiler records the color yellowish white, but the hymenium of the dried specimens is more orange. Berkeley distinguishes it from lacrymans by the "permanent orange." I measured the spores at Kew, 4 x 5. Petch gives an extended account of the habits of the plant but does not refer to Merulius lacrymans. I have seen other plants in the museums that I think are the same. Merulius pseudo-lacrymans at Berlin, from India, is surely the same. Plant referred to Merulius giganteus at Kew from Brazil is the same, I think. Also the types of Merulius giganteus from Austria, at Berlin, may be the same but more probably Merulius lacrymans. My spore record was "globose 5 mic." but Hennings has a memorandum "5 x 8." The author thought it was different from lacrymans from its dark coloration, but not much can be told now as to the color of these old museum specimens.

NOTE 686.—**Polyporus alboluteus, from J. M. Grant, Washington.** This is an alpine plant. Its home is the high altitude of the Rockies, where it is abundant. Outside of its natural locality, it is very rare. The only stations known are New York (Peck), Michigan (Kauffman), Idaho (Weir), and Washington (Grant); and the specimens from all these sporadic localities are scanty and not well developed.

NOTE 687.—**Polyporus mollis, from D. B. Griffin, Vermont.** The context of this plant is not "soft," which led to a comparison of the similar specimens in our museum, which "turn red in drying." Polyporus mollis and Polyporus fragilis have same microscopic features, allantoid spores and no cystidia. (Cfr. Apus. Polyporus, p. 318.) But we note a feature in regard to Polyporus ursinus (l. c, p. 319) that we had overlooked.

In addition to the different spores and surface, this has numerous hyaline, smooth cystidia. Specimen 1212 that we determined for Mr. Weir as Polyporus mollis is Polyporus ursinus. We have Polyporus ursinus from L. O. Overholts, and so reported it to him, but he omitted it from his paper.

NOTE 688.—**Polyporus corruscans, small spored form, from I. M. Johnston, Southern California.** There are mycologists that look upon spore size as the final test of a species. I do not place much stress on it. I received two collections from Mr. Johnston, both to my eye the above species. One (No. 1767 on the pepper tree) had the usual spores, deep-colored

5-6 x 6-7 mic. The spores of the other (210 on Platanus) I was surprised to find much smaller—about 3 x 4 mic., and much paler color. I might base a "new species" on it, but I think that is inutile. Nor did either specimen have the marked "mycelial core" that we associate with the species. Both specimens were ungulate, but a third collection was thin and applanate. All these are, however, the same plant for me.

NOTE 689.—**Polyporus volvatus, from J. E. A. Lewis, Japan.** While the strange occurrence of this unique species in Japan and China is well known, these specimens present a feature not seen before. The usual plant has "a reddish brown, resinous stain" but these specimens are shiny, and as strongly resinous as Polyporus lucidus. A new variety might be based on it, but I think "inutile."

NOTE 690.—**Polyporus amygdalinus, from J. E. A. Lewis, Japan.** This is the second specimen of this rare species I have received from Japan (Cfr. Note 495). The color of the young, fresh plant is said to be orange, and indications remain on this specimen. The context of the pores is white, contrasting with the salmon context. Spores, I judge, are subglobose, about 4 mic., although most of them in this specimen are collapsed and appear reniform.

NOTE 691.—**Panus strigosus, from W. B. McDougall, Ill.** Compare Myc. Notes, p. 746 (Fig. 1121). This rather remarkable species grows in the Eastern states but is very rare in the West. This is the first record to my knowledge. Professor McDougall found it growing on the willow.

NOTE 692.—**Stereum tenebrosum, from Rev. Louis Mille, Ecuador.** This plant which reaches me often from South Africa was called Stereum lobatum with cinerous hymenium in Letter 46. To the eye it is much like the common Stereum lobatum, excepting the much darker hymenium.

NOTE 693.—**Trametes cervina, from Rev. Louis Mille, Ecuador.** Tropical form which is thinner than the European form, and should have a special name. I get it also from Brazil, Ceylon and Japan. There is much confusion as to the name. It is Trametes mollis of European books, but the name has no application to it, and is antidated by Persoon's name. It is Trametes stereoides of Bresadola's Brazil determinations, not for me (Cfr. Note 358, where discussed in full). But there is a more potent reason for not calling this tropical form Trametes stereoides. It is usually a Daedalea and it has no resemblance to Daedalea stereoides as named from the tropics by Fries, which is a plant with a white context.

NOTE 694.—**Polyporus lucidus with yellow pore mouths, from Gabriel M. Núñez, Ecuador.** I should in fact name this as a new species, for I never saw Polyporus lucidus before with yellow pore mouths. If I were sorting out the sub-species of Polyporus lucidus I would give it a name, but there are too many names for Polyporus lucidus now.

NOTE 695.—**Polyporus (Gan.) oregonensis, from O. M. Oleson, Iowa.** This for me is a large obese form of Polyporus lucidus. It is common in our Northwest. The collection of a specimen by Mr. Oleson in Virginia, where collected by Mr. Oleson, tends to confirm our view that it is a variant of our usual species.

NOTE 696.—**Polystictus elongatus, from F. W. Paige, Iowa.** While there is a slight difference this is so close to the above that it cannot be separated. Its occurence in a station so far north is exceptional, although it is not rare in our Southern states. These grew in a green house and the mycelium was probably introduced. Polystictus elongatus which differs from our common Polystictus pargamenus only in the color of the tubes, is a frequent plant in the tropics, particularly the East, Ceylon, Java, Japan, etc., and there replaces the species common with us.

NOTE 697.—**Stereum Thozetii, from J. T. Paul, Australia.** This is the first collection made since originally named from Australia by Berkeley, years ago. (Cfr. Stip. Stereum, p. 21.) The species is too close and probably same as Stereum diaphanum of the United States.

NOTE 698.—**Calvatia Gardnerii, from Rev. J. Rick, Brazil.** Whether this species originally from Ceylon is really different from our common Calvatia craniiformis of the United States, is a question; I doubt if it is. The internal features, viz: olive gleba, small, globose, almost smooth spores, 4 mic., and slender, colored, capillitium threads, are the same. Rev. Rick's specimen has a slender, stalk-like, strongly rooting base, and our species a thick, obese, sterile portion almost as thick as the fertile portion. This is the only difference I note and this is not a real difference in a puff ball. I consider Calvatia Gardnerii as a tropical form of Calvatia craniiformis.

NOTE 699.—**Hexagona mirabilis, from Rev. J. Rick, Brazil.** Surely this is same plant I named (Hexagona pamphlet, p. 37, fig. 329) from Samoa. I wonder if they have a name for it in Brazil. It is Hexagona for me, Favolus for Bresadola, Pseudofavolus for Patouillard. It is the only white species in the section. The spores (not previously recorded) are cylindrical, straight, 6 x 16 mic. hyaline, smooth.

NOTE 700.—**Favolus dermoporus, from Rev. J. Rick, Brazil.** The difference between this is Favolus brasiliensis, as we hold, is shown in our figures Myc. Notes Pol. Issues, p. 20, fig. 258 and Myc. Notes, p. 554, fig. 759. Favolus dermoporus has much larger and deeper pores. Both are white plants with same spores (8½ x 8 straight) no cystidia, and both may be same species as considered by Rev. Rick. They seem different to us.

Three pages of Notes crowded out of this letter will be included in the next issue.

LETTER No. 68.

Acknowledgment of specimens received since last report. My best thanks are extended to those who favored me with specimens. Some of the notes that will be illustrated with photographs will be published in future issues of Mycological Notes.

We are glad to state that since our last Letter we have largely caught up with our work, but still have on hand to be studied a number of specimens from the following correspondents:

P. van der Bijl, South Africa.
Rev. Johan Rick, Brazil.
V. Demange, China.
T. Hunter, Gold Coast, West Africa.
G. Zenker, Congo Belge, West Africa.

As soon as we get these finished we expect to make a collecting trip to the West Indies or American tropics, and shall probably be gone for two or three months.

In my printed Letter I do not give authority for names, believing that the binomial should represent a plant name, but in acknowledging the specimens to my correspondents I give the "authority" in event they desire to use the same. All specimens are acknowledged by personal letter as soon as I get time to study and report on them. Foreign correspondents may send specimens to my English address, and they will reach me promptly, although in countries which have direct parcel post arrangements with the United States it is best to send them by parcel post direct to me. Specimens may be sent to either of the following addresses:

C. G. LLOYD,
224 West Court Street,
Cincinnati, Ohio.

C. G. LLOYD,
95 Cole Park Road,
Twickenham, England.

Cincinnati, Ohio, December, 1918.

BAKER, CHARLES H., Florida:

Oligonema flavidum.—Polystictus sanguineus.—Favolus braziliensis.—Favolus caespitosus. (Will be published in Mycological Notes.)—Lentinus velutinus.—Fuligo septica.—Xylaria Longiana.—Auricularia auricula-Judae.—Irpex tabacinus.—Trametes lactea.—Naucoria semiorbicularis.—Isaria flabelliformis. (Published, Xylaria Notes, page 12.)

BALLOU, DR. W. H., New York:

Hydnum septentrionale.—Polyporus elegans.—Polyporus Rostkovius.—Polyporus albellus.—Lycoperdon umbrinum.—Camillea Saegraena. (From American tropics.)—Reticularia Lycoperdon.

BONANSEA, DR. SYLVIO, Mexico City, Mexico:

Lentinus rivulosus. (Will be published in Mycological Notes.)—Morchella conica.—Helvella sulcata.

BOUTLOU, REV. A., West Virginia:

Clavaria fuciformis.—Naucoria arvalis.—Mitremyces cinnabarinum.

BRENCKLE, DR. J. F., Arkansas:

Polystictus pargamenus.—Polyporus gilvus.—Stereum complicatum.—Guepinia spathulata.—Lycoperdon cruciatum.—Fomes applanatus.—Nummularia Bulliardii.—Polyporus smaragdinus. (Will be published in Mycological Notes.)—Lycoperdon acuminatum.—Xylaria Hypoxylon.—Naucoria semiorbicularis.—Arachnion album.—Lycoperdon atropurpureum.—Lentinus strigosus.

CLELAND, Dr. J. BURTON, New South Wales:

Endogone tuberculosa. (Published in Mycological Notes, page 799.)—Xylaria faveolis.—Stereum Thozetii.—Polystictus Schumanni.—Stereum Miquelianum.—Stereum cinerescens.—Fomes densus.—Trametes protea.—Polyporus trabeus.—Trametes Eucalypti.—Polyporus Clemensiae. (See Note 734.)—Fomes Yucatensis.—Fomes roburneus.—Fomes hornodermus. (See Note 735.)—Polyporus pertusus. (Will be published in Mycological Notes.)—Fomes badius.—Polyporus (Gan.) sessilis.—Polystictus versicolor.—Laschia caespitosa.—Polyporus antilopus.—Trametes rosea.—Trametes semitosta. (See Note 736.)—Polyporus rufescens.—Polyporus gilvus.—Geaster arenarius.—Geaster minimus.—Geaster arenarius.—Polystictus obovatus.—Hexagonia Gunnii.—Polystictus elongatus.—Corticium caeruleum.—Polyporus gilvus. (See Note 737.)—Polyporus Albertinii.—Merulius Corium.—Polyporus fruticum.—Stereum cinerescens.—Fomes setulosus.—Polyporus Patouillardii. (See Note 738.)—Fomes rimosus.—Fomes pseudosenex.—Calvatia craniiformis. (See Note 733.)—Fomes Robinsoniae.—Calvatia lilacina.—Daedalea gibbosa.—Lycoperdon gemmatum.—Campanella cucullata. (Will be published in Mycological Notes.)

COKER, W. C., North Carolina:

Merulius tremellosus.—Tremella vesiculosa.—Merulius incarnatus.—Exidia recisa.—Merulius corium.—Tremella frondosa.—Tremella fuciformis.

DAVIS, SIMON, Massachusetts:

Polyporus Schweinitzii.—Lycoperdon nigrescens.

EASTWOOD, MISS ALICE, California:

Scleroderma Cepa.

ELL, HERBERT, Cincinnati, Ohio:

Cyathus vernicosus.

FELIPPONE, DR. F., Uruguay:

Polyporus gilvus.—Polystictus sanguineus.—Mycenastrum Corium.—Polystictus Felipponei. (Will be published in Mycological Notes.)—Stereum hirsutum.—Polyporus (Gan.) resinaceus.—Fomes gibbosus.—Trametes hispida.—Polyporus dissitus.—Scleroderma flavida.—Scleroderma Cepa.—Polystictus fulvicolor.—Polyporus (Gan.) Oerstedii.—Tylostoma subfuscum.

FISHER, GEO. L., Texas:

Lentinus strigosus.—Stereum fasciatum.—Stereum spadiceum.—Polyporus

Curtisii.—Polystictus hirsutus.—Polystictus pargamenus.—Lenzites saepiaria.—Stereum complicatum.—Cyathus stercoreus.—Calvatia craniiformis.—Irpex pachylon.—Poronia oedipes.—Lycoperdon acuminatum.—Scleroderma flavidum.—Geaster tomentosus. (Will be published in Mycological Notes.)—Poria xanthospora.—Scleroderma Cepa.—Fomes Texanus (?).—Polystictus Houstonii. (Will be published in Mycological Notes.)—Lycoperdon umbrinum.

HUNTER, T., West Africa:

Trametes cingulatum.—Lentinus velutinus.—Schizophyllum commune.—Schizophyllum commune var. multifida.—Trametes Persoonii.—Polystictus occidentalis.—Lentinus villosus.—Xylaria allantoidea.—Xylaria Schweinitzii.—Xylaria scruposa. (Will be published in Mycological Notes.)—Xylaria moriformis. (Will be published in Mycological Notes.)—Xylaria pallide osteolata.—Xylaria gomphus. (Published in Xylaria Notes, page 15.)—Polyporus durus.—Polyporus vinosus.—Trametes Meyenii (=Trametes obstinatus).—Polystictus occidentalis.—Polyporus (Amaur.) rudis. (See Note 739.)—Auricularia Hunterii. (Published in Mycological Notes, page 808.)—Polyporus (Amaur.) conjunctus. (Published in Mycological Notes, page 812.)—Polystictus torridus.—Polyporus arcularius.—Polyporus (Amaur.) salebrosus. (Published in Mycological Notes, page 807.)—Trametes devexa.—Auricularia auricula-Judae.—Polystictus luteo-olivaceus.—Fomes melanopus.—Trametes hystrix.—Polystictus xanthopus.—Polystictus leontinus.—Lentinus tuber-regium. (See Note 740.)—Xylaria torquescens. (Will be published in Mycological Notes.)

HUNTINGTON, J. W., Massachusetts:

Fomes pinicolor.—Clitopilus abortivus.—Thelephora terrestris.

JOHNSTON, I. M., California:

Polyporus (Ganodermus) polychromus. (See Note 741.)—Tylostoma campestris.—Polyporus sulphureus.—Fomes robustus.—Geaster triplex.

JONES, KATE A., Grantham, N. H.:

Daedalea confragosa.—Daedalea unicolor.—Polystictus perennis.—Polystictus velutinus.—Lenzites saepiaria.—Polyporus rutilans.—Polystictus cinnabarinus.—Fomes leucophaeus.—Polystictus hirsutus.—Polyporus adustus.—Favolus europaeus.—Schizophyllum commune.—Polyporus betulinus.—Tremellodendron pallidum.—Stereum complicatum.—Polystictus pargamenus.—Polystictus versicolor.—Polystictus Grayii.—Stereum fasciatum.—Polyporus albellus.

MERRILL, E. D., Philippine Islands:

We have received from Mr. Merrill a very large shipment of Philippine fungi, embracing the larger portion of the collections made in the Islands. A systematic account with photographs of the rarer species will be shortly published. In the following list those marked with a star will be illustrated.—Polystictus elongatus.—Polystictus occidentalis.—Polystictus versatilis.*—Polystictus byrsinus.—Polystictus tenuiculus.*—Polystictus badius.*—Polystictus phocinus.—Polystictus tabacinus.—Polystictus sanguinius.—Trametes lactinea.—Trametes Muelleri.—Trametes acuta.—Trametes Persoonii.—Trametes picta.—Trametes semitosta.—Trametes truncata.*—Trametes badia.*—Trametes aspera.*—Daedalea maculosa.*—Daedalea reflexa.*—Daedalea flavida.*—Lenzites repanda.—Lenzites acuta.—Cyclomyces fuscus.*—Hexagona apiaria.

—Hexagona atra.*—Hexagona scruposa.*—Hexagona flavofusca.*—Hexagona tenuis.—Hexagona tricolor.—Hexagona vespacea.—Hexagona flavida.—Favolus albus.—Favolus fibrillosus.—Favolus spathulata.—Favolus molucceensis.—Favolus dermoporus.—Favolus tenuissimus.*—Favolus platyporus.*—Polyporus dorsalis.—Polyporus Amboinensis.*—Polyporus Mangiferae.—Polyporus fasciatus.—Polyporus ochrolaccatus.—Polyporus rugosus.—Polystictus affinis.—Polystictus crenatus.—Polystictus microloma.—Polystictus pseudo-perennis.*—Polystictus xanthopus.—Polystictus florideus.—Polystictus nigropus.—Polystictus sepia.*—Polyporus Rhizophorae.—Polyporus rubidus.—Polyporus Menzesii.*—Polystictus murinus.*—Polyporus maliensis.—Polyporus trigonus.*—Polystictus incisus.* — Polyporus dictyopus. — Fomes subresinosus. — Fomes pinicolor.—Fomes latissimus.—Fomes Kermes.—Fomes agglutinatus.*—Fomes adamantinus.—Fomes melanoporus.—Fomes tenuissimus.—Fomes lamaensis.*—Fomes rimosus.—Fomes endotheius.—Fomes fastuosus.*—Fomes Caryophylli.*—Fomes pachyphloeus.—Fomes applanatus.—Fomes australis.—Polyporus immaculatus.—Polyporus rugulosus.—Polyporus anebus.—Polyporus semilaccatus.—Polyporus durus.—Polyporus vinosus.—Polyporus gilvus.—Polyporus pertusus.—Polyporus Williamsianus.—Polyporus resinaceus.—Polystictus vellereus.*—Polystictus polyzonus.

MILLE, REV. L., Ecuador:
Daldinia concentrica.—Trametes Cubensis.—Stereum (Hym.) Cocoa.

MAC CLEMENT, W. T., Ontario:
Daedalea quercina.—Polyporus elegans.—Trametes hispida.—Polystictus pargamenus.—Daedalea quercina.—Daedalea unicolor.—Trametes carnea.——Fomes fomentarius.—Polystictus pargamenus.—Lenzites betulina.—Polyporus rutilans.

MC DOUGALL, W. B., Illinois:
Polyporus induratus. (See Note 743.)

MACOUN, JOHN, British Columbia:
Polystictus ochraceous, pale form.

NOBLE, MRS. M. A., Florida:
Merulius Corium.—Scleroderma Geaster.—Polyporus gilvus.—Fomes marmoratus.—Scleroderma Cepa.—Scleroderma tenerum.—Lycoperdon rimulatum.—Fomes fasciatus.—Favolus Braziliensis.

NÚÑEZ, NELSON, Ecuador:
Daldinia concentrica.—Polyporus radiatus.—Morchella conica.—Stereum Leichardtianum. (See Note 742.)—Myriostoma coliformis.—Polystictus versicolor. (?).—Durogaster brunnea. (Will be published in Mycological Notes.)—Lentinus chordalis. (Will be published in Mycological Notes.)—Bovista nigrescens.

OVERHOLTS, L. O., Pennsylvania:
Panus laevis (from Missouri).—Radulum casearium (from White Mountains).

PARISH, S. B., San Bernardino, California:
Bovista plumbea.

PATTERSON, MRS. FLORA, Washington, D. C.:
Calvatia cretacea (very ?) from Nome, Alaska.

PIPER, C. V., Mississippi.
Lycoperdon cruciatum.

PLITT, C. C., Maryland:
Hydnum zonatum.

RICK, REV. J., Brazil:

Polyporus Blanchetianus.—Polyporus lentus. (See Note 744.)—Polyporus formosissimus. (See Note 745.)—Polyporus perturbatus. (See Note 745.)—Polyporus (Amaur.) Sprucei. (See Note 746.)—Polyporus (Amaur.) calcigenus. (See Note 747.)—Polystictus brachypus.—Phylloporus Rompelli (as named by Rev. Rick).—Polyporus modestus.—Stereum aurantiacum.—Polyporus dichrous.—Calvatia Gardneri (=craniiformis.)—Stereum (Hym.) tenuissimum.—Polyporus zonalis.—Stereum (Hym.) damaecorne.—Fomes Niaouli.—Polystictus polyzonus.—Polystictus versicolor.—Polyporus fimbriatus.—Auricularia Moellerii.—Calocera cornea.—Merulius tremellosus.—Trametes hydnoides.—Lentinus velutinus.—Trametes Meyenii.—Stereum diapanum.—Polyporus luteo-nitidus.—Polyporus rheicolor.—Polyporus licnoides.—Myriostoma coliformis.—Polyporus Patouillardi.—Lycoperdon umbrinum.—Tylostoma verrucosum.—Lycoperdon oblongisporum.—Lycoperdon crocatum.—Geaster lageniformis.—Hydnum rawakense.—Matula poroniaeformis.—Hydnum villipes. (Published in Mycological Notes, page 801.)—Polyporus (Amaur.) inopinus. (Published in Mycological Notes, page 802.)—Cyathus stercoreus.—Polystictus aculeifer. (Will be published in Mycological Notes.)—Geaster stipitatus. (Published in Mycological Notes, page 801.)—Dacryomitra depallens. (Published in Mycological Notes, page 803.)—Polyporus Puttemansii.—Rickella transiens. (Published in Mycological Notes, page 800.) Geaster trichifer. (Published in Mycological Notes, page 804.) Geaster triplex.—Geaster vittatus.—Tylostoma squamosum.—Polyporus ocholeucus.—(See Note 748.)—Tremella frondosa.—Cyathus Montagnei.—Rimbachia cyphelloides. (Published in Mycological Notes, page 802.)—Rimbachia vitellina. (Published in Mycological Notes, page 803.)—Polystictus pinsitus.—Polyporus humilis. (Published in Mycological Notes, page 805.)—Polyporus subfulvus.—Polyporus guaraniticus.—Favolus guarapiensis.

Isaria flabelliformis.—Polyporus rigidus.—Polyporus subfulvus.—Polyporus dictyopus.—Polyporus caesius.—Polyporus petaliformis.—Polyporus Blanchetianus.—Lycoperdon pusillum.—Geaster saccatus.—Lycoperdon piriforme.—Lycoperdon cruciatum.—Lycoperdon velutinum.—Tylostoma pygmaeum.

Xylaria discoidea.—Xylaria anisopleura.—Xylaria grammica.—Xylaria apiculata.—Xylaria cristata. (Will be published in Mycological Notes.)—Porodiscus Rickii. (Will be published in Myco. Notes.)—Xylaria castorea. (Will be published in Myc. Notes.)—Xylaria rhophaloides.—Xylaria fusca. (Will be published in Myc. Notes.)—Xylaria deserticolor.—Xylaria rhizomorpha. (Will be published in Myc. Notes.)—Xylaria Berkeleyi (?).—Xylaria luxurians. (Will be published in Myc. Notes.)—Xylaria violaceo-pannosa. (Will be published in Myc. Notes.)—Xylaria corniformis.—Xylaria lancea.—Xylaria arbuscula. (Will be published in Myc. Notes.)—Xylaria leprosoides.

(Will be published in Myc. Notes.)—Xylaria Cookei. (Will be published in Myc. Notes.)—Xylaria scruposa.—Xylaria faveolis.—Xylaria multiplex. (Will be published in Myc. Notes.)

The following Agarics are listed under the names as sent by Rev. Rick. We do not try to determine dried Agarics: Lepiota olivacea.—Collybia atrata.—Lepiota cagulina.—Lepiota cepaestipes.—Lepiota tigrina.—Stropharia caput Medusae.—Collybia tenacella.—Psaliota blattaria.—Omphalia liniophylla.—Clitocybe ditopus.—Lepiota Georginea.—Omphalia citrinella.—Pluteus hispidulus.—Eccilia flocula.—Hygrophorus puniceus.—Pholiota Cookei.—Omphalia camptophylla.—Lepiota felina.—Boletus tropicus.—Omphalia chrysophylla.—Clitocybe socialis.—Collybia mucida.—Omphalia felinatica.—Omphalia caudiscipula.—Psalliota sagatus.—Mycena rugosa.

The following determined by Mr. F. J. Seaver: Phillipsia dochmia.—Phillipsia domingensis.—Phillipsia gigantea (Seaver in Mss.)—Otidea microspora.

RODWAY, L., Tasmania:

Stereum lobatum.—Polystictus bruneo-leucus.—Polystictus zonatus.—Xerotus Archeri.—Fomes hemitephrus.

ROSEN, H. R., and J. A. ELLIOTT, Arkansas:

Polyporus adustus.—Polystictus pargamenus.—Polyporus gilvus.—Stereum fasciatum.—Irpex cinnamomeus.—Polyporus dryadeus.

SCARFE, W. A., New Zealand:

Xylaria Schweinitzii. (Will be published in Myc. Notes.)—Stereum hirsutum.—Tremellodon gelatinosum.—Gyromitra esculenta. (Will be published in Myc. Notes.)

STEVENS, F. L., Illinois:

Sixty collections of micro-fungi not in my line of work, but I am very glad to have them for the museum. They embrace many co-type specimens from Porto Rico and various localities.

STEVENSON, JOHN A., Porto Rico:

Lenzites striata.—Favolus braziliensis.—Trametes hydnoides.—Trametes hispidula. (See Note 749.)—Polystictus arenicolor.—Fomes marmoratus.—Geaster mirabilis.—Lenzites repanda.—Polystictus occidentalis.—Schizophyllum commune.—Polystictus hirtellus.—Lentinus strigosus.

TORREND, REV. C., Brazil:

Polyporus colossus.—Lanopila Wahlbergii.—Polyporus dorsalis.—Polystictus hispidula.—Polyporus gilvus.—Polystictus hexagonoides.—Xylaria herculea.—Xylaria polymorpha.—Xylaria obesa.—Xylaria dealbata (?).—Xylaria Hypoxylon.—Xylaria rhytidophloea.—Xylaria Cubensis (very?).—Xylaria anisopleura. (Will be published in Myc. Notes.)—Xylaria chordaeformis. (Will be published in Myc. Notes.)—Xylaria herculea. (Will be published in Myc. Notes.)—Stereum (Hym.) damaecorne.—Stereum nitidulum.—Fomes cinereus.—Xylaria apiculata. (Will be published in Myc. Notes.)—Xylaria allantoidea.—Polyporus dorsalis.—Polyporus modestus.—Xylaria grammica.—Xylaria faveolis. (Will be published in Myc. Notes.)—Dacryomyces pallidus. (Will be published in Myc. Notes.)—Tremella compacta. (Will be published in Myc. Notes.)—Pilacre faginea.—Guepinia elegans. (Will be published in Myc. Notes.)—Chlorosplenium aeruginosum.—Tremella mesenterica.—Tremella fu-

ciformis.—Ustulina vulgaris.—Kretzschmaria Clavus.—Camillea turbinata.—Rosellinia aquila.—Camillea turbinata.—Camillea bomba.—Fomes oriflavus.—Polystictus trichomallus.—Xylaria multiplex.—Polyporus grammocephalus.—Daedalea Sprucei.

TORREND, REV. C., from Australia:

Polyporus ochroleucus.—Tremella mesenterica.

TORREND, REV. C., from Madagascar:

Xylaria hypoxylon.—Xylaria apiculata. (Will be published in Myc. Notes.)

WHETSTONE, MRS. M. S., Minnesota.

Polyporus melanopus (?).—Hydnum friabile.

YASUDA, PROF. A., Japan.

Schizophyllum commune.—Polyporus dichrous.—Fomes fomentarius.—Stereum bicolor.—Pterula subulata.—Stereum (pro tem) sepia. (See Note 750.)—Trametes Japonica. (See Note 751.)—Hypoxylon punctulatum.—Coniophora arida.—Auricularia papyracea. (See Note 752.)—Merulius castaneus. (Published in Mycological Notes, p. 809).—Heliotum sulphurinum.—Poria ferruginosa.—Poria viticola.—Coniophora Matsuzawae. (See Note 753.)—Lentinus lepideus.—Hydnum discolor.—Trametes carnea.—Polyporus profissilis. (Published in Mycological Note, p. 810.)—Polyporus cristatus.—Podocrea Cornu-Damae. (Published in Mycological Notes, p. 810.)

Marasmius candidus.—Sarcoscypha japonica (as named by Prof. Yasuda).—Exidia uvapassa.—Tremella fuciformis.—Isaria farinosa.—Isaria Erastalides (as named by Prof. Yasuda).—Hydnum pergameneum. (Will be published in Myc. Notes.)—Trametes Dickinsii.—Polystictus scopulosus. (Will be published in Myc. Notes.)—Podocrea xylarioides. (Will be published in Myc. Notes.)—Polystictus cryptomeniae.—Fomes McGregori.—Polystictus elongatus.—Polyporus trabeus.—Polyporus Greenii. (Will be published in Myc. Notes.)—Mucronella fascicularis.—Stereum caperatum.—Polystictus velutinus.—Fomes Yucatensis.

ZENKER, DR. GEORG, Cameroun:

Polystictus occidentalis.—Polyporus naliensis.—Polystictus cinereus.—Xylaria bipindensis. (Will be published in Myc. Notes.)—Polystictus xanthopus.—Polystictus concinnus.—Xylaria Hypoxylon.

NOTE 701.—**Polyporus pocula, from L. Rodway, Tasmania.** This unique, little species was originally from the United States, and until I investigated, it was supposed to grow nowhere else. We have since recorded it from French Guiana, Brazil, Japan, South Africa, Australia and now from Tasmania.

NOTE 702.—**Geoglossum Walteri, from L. Rodway, Tasmania.** This species (or form of G. hirsutum) is based on the seven, septate spores, and was originally from Australia. Mr. Rodway's plants are no doubt the same as the original. We have in the United States a species so referred to the Australian on this character (the seven, septate spores). On comparison we think our species is not the same. It is of a different stature, a smoother plant, with much shorter spines, and the spores are larger.

NOTE 703.—**Merulius Corium var. pallens, from W. A. Scarfe, New Zealand.** This with same texture and form as Merulius Corium has a very pale hymenium, almost white. It is sans doubt the plant that Berkeley called Merulius pallens from New Zealand, though I do not know this pale form in Europe, and Merulius pallens was named from Europe.

NOTE 704.—**Polyporus setiger, from W. A. Scarfe, New Zealand.** A rare species (Cfr. Apus. Polyporus, p. 311) heretofore only known from the type at Kew which came from New Zealand. Mr. Scarfe sends a nice specimen.

NOTE 705.—**Fomes Clelandii, from W. A. Scarfe, New Zealand.** This was recently named from Australia. (Cfr. Note 356.) This is the second collection I have gotten. P. S.—I have since gotten it from Mr. Cheel and also another collection from Dr. Cleland, Australia.

NOTE 706.—**Polyporus lenis, from Alvaro A. de Silveira, Brazil.** As near as I can judge from my photograph of the only good type which is at Kew. The one at Paris is badly eaten. This is the first time I have gotten it.

NOTE 707.—**Phlebia radiata, from Dr. S. M. Stocker, Minnesota.** When soaked these specimens appear to me about fawn of Ridgway. At first I thought a "new species" but after consideration concluded them to be a color variation of the common Phlebia radiata. They were collected late in the season (November 25th) and color was probably influenced by the cold. At first view, however, they did not suggest the usual color of this plant.

NOTE 708.—**Stereum Mougeotii (or Hymenochaete Mougeotii), from E. W. Swanton, England.** This is a very characteristic although rare species. It has typical, dense setae of the section Hymenochaete although one would hardly suspect it from the color of the plant. The color of the dried plant called "sanguineo-rubra" by both Fries and Persoon matches maroon of Ridgway.

These are the finest specimens I have ever gotten and Mr. Swanton states it is the second British record. It grew on silver fir.

NOTE 709.—**Polyporus albospongia, from Rev. C. Torrend, Brazil.** In Note 315 we referred a plant from Rev. Torrend, Brazil (343) to Polyporus altocedronensis, named from Cuba. It was a soft, white plant quite similar to the eye to Polyporus leucospongia of our western, alpine regions. The spores are globose, 3-3½ mic. while those of leucospongia are elongated. We recorded them 6-8 mic. which was a misprint for 3 x 6-8. On a recent visit to New York we brought home a piece of the type of Polyporus altocedronensis, and on comparison with Rev. Torrend's plant we find it entirely different, particularly in the nature of the hyphae of the context. They are peculiar in altocedronensis, and it is a new type of structure to me. In color also the plants are different. Polyporus albospongia is a white plant. Polyporus altocedronensis was described as white but is more brown than white now and I judge it is the natural color, for the hyphae under the lens are colored.

NOTE 710.—**Polyporus megaloporus, from Rev. C. Torrend, Brazil.** The peculiar setae characterizing this species (Cfr. Stip. Pol., p. 138) are so scattered and few on these specimens that I at first did not find them. Usually these setae are abundant and conspicuous.

NOTE 711.—**Calvatia versispora, from Jintaro Umemura, Japan.** This is a mysterious plant. It was published, Note 247 and the spores considered, Myc. Notes, p. 548. It has little suggestion at first of a Calvatia. Indeed, before I cut this specimen I thought it was a Polysaccum. The capillitium which I described as "indefinite" is more definite in this specimen. It consists of short, thick (10-12 mic.) hyaline, threads, often septate, and short branched. The spores are as variable in size and shape as shown in our figure on Page 548.

NOTE 712.—**Irpex tabacinoides, from Prof. A. Yasuda, Japan.** As named by Prof. Yasuda. This is very close to Irpex tabacinus (also found in Japan, Cfr., Note 619) but has much paler context and typical, dark setae. Rarely one finds on Irpex tabacinus the typical setae. Most are sub-hyaline.

NOTE 713.—**Polystictus caesio-glaucus, from Prof, A. Yasuda, Japan.** As named from Japanese specimen, but apparently not a species but an effete, denuded condition of Polystictus azureus.

NOTE 714.—**Tricholoma Shiitake, from Prof. A. Yasuda, Japan.** I am glad to get specimens of this plant of so much economic importance in Japan, but I cannot see its synonymy clearly. Berkeley when he named "Armillaria edodes" from Japan, says it is called "Shii-take." Is this not Berkeley's plant? It does not seem to have a ring, hence not Armillaria. Schroeter states that Berkeley's plant grew on the ground and is called "Matsutake," but did Schroeter know? Schroeter called this Collybia Shiitake, but if it has no ring it is a Tricholoma, I think. The name, Cortinellus used by Hennings is in Eng. & Prantl only a juggle for Tricholoma. Tanaka designates it as Lepiota Shiitake, which would imply a ring. I think the writers have the two species confused but I cannot get them straight.

NOTE 715.—**Stereum lilacino-fuscum, from Prof. A. Yasuda, Japan.** This as named by us in Myc. Notes, p. 680 as Stereum Sendaiense. The specimen I originally received from Prof. Yasuda was a Stereum, according to the definition of that term, and as I knew it had not been named as a Stereum, I applied the name to it. The second sending from Prof. Yasuda, was entirely resupinate, and thinking it might have a name as a Corticium and not being informed on the resupinates, I sent it to Prof. Burt who kindly advised me as above. I am very glad to make the correction, for there are too many names now existing for fungi.

NOTE 716.—**Hydnum Blackfordae, from Professor A. Yasuda, Japan.** The uneven distribution of fungi is illustrated by the occurrence of this rare species in Japan. Unknown from Europe, it is very rare with us, and as far as heretofore known, only occurred in a restricted region around Boston. The leading features are fleshy, mesopodial, dark greenish color and subhyaline, tubercular, irregular spores.

NOTE 717.—**Hypoxylon viride, from Professor A. Yasuda, Japan.** As named by Prof. Yasuda, I do not know the old species of this genus, hence would not pass on new species, but I think not a European or American species. I doubt the genus. From its bright color

and fleshy stroma it is a Hypocreaceae, but it has spores of a Hypoxylon. I see no genus to fit it, but I have never worked much on this class of plants, and do not have definite ideas of the limitations of the genera.

NOTE 718.—**Panus tahitensis, from Professor A. Yasuda, Japan.** Named from description (from Tahiti) hence dubious. Sent as Panus stipticus, which it is in reality, with same general appearance, but so small and pale that a distinct name for it is preferable to a name as a variety. It is less than a cm. in diameter. The color is a pale shade of cinnamon. The stipe lateral, very short, with a white tomentum. Gills determinate, narrow, close, not venose connected as in Panus stipticus. The dried specimen curls, and before soaking out resembles Trogia crispa rather than Panus stipticus.

NOTE 719.—**Naematelia encephala, from S. M. Zeller, Washington.** This specimen growing on the Douglas fir in our North-west (Washington) is so much larger than the plant in our Eastern States on oak (Cfr. Note 641) that it perhaps should have a special name. It resembles the Japanese form Naemetelia Japonica (Note 220) but the core is white instead of yellow. All these plants should, however, be classed as forms of one species, for excepting color and size, they are the same.

NOTE 720.—**Trametes lacerata.** James R. Weir has recently published that this species named in Myc. Notes, p. 604, is one of the varying forms of Trametes heteromorpha or Lenzites heteromorpha, as named by Fries. We think Mr. Weir is probably correct, although we did not suspect it at the time we named the plant.

NOTE 721.—**Naucoria arvalis.** (Cfr. also Note on page 753.) Since our article on Naucoria scleroticola, p. 722, was written, we have noticed where Hennings in 1903 published a Naucoria tuberosa from Russia. Hennings knew at the time that Naucoria arvalis had sclerotia, but notwithstanding he proposed a new name for his Russian plant. There is no doubt in my mind now, notwithstanding there are some spore discrepancies, that the plant that Father Boutlou sent, and which we named Naucoria scleroticola, and also the plant that Hennings had named Naucoria tuberosa, are one and the same thing, and should be referred to Naucoria arvalis.

NOTE 722.—**Laschia papulata.** We ascribed to this (Note 246) "color white, drying pale flesh." Recently in looking up the original figure in Gay's Chile, we found the color more yellow with an olive shade. We question our determination in Note 246 (from Madagascar), but the synonyms we gave there are apparently correct.

NOTE. 723.—**Stereum annosum.** We are advised by Miss Wakefield that the plant we published in Myc. Notes, p. 696, as a continuous Stereum frustulosum is Stereum annosum, and on comparison with the little frustule of the type we have, there is no doubt. But with same context, peculiar cystidia and peculiar wood rot, we still believe that Stereum annosum is only a continuous Stereum frustulosum. However, we have Stereum annosum from Philippines that has a thick, pileate form. It is resupinate in our traditional literature.

NOTE 724.—**Daedalea Eatonii.** Miss Wakefield advises me that the plant I have named from South Africa as above does not correspond to the type at Kew, and is in her opinion Polysictus (or Trametes) obstinatus. As I have not access to the type I cannot say, although I thought I had correctly referred it from my photograph and notes. It appears to me different from Trametes obstinatus, as I have abundant specimens from many countries, although I admit it is quite close, and would not take issue with any one who considers them the same. Miss Wakefield thinks Daedalea Eatonii (type) is Lenzites trabea. This is such a common plant with us, and I am so familiar with it, I do not see how I could have overlooked it at Kew if that is the case. At any rate if true, there will be no further use for the name Daedalea Eatonii, and I shall continue to use it for the South African plant, although I shall not write "Berkeley" after it. Just as I take the name Lenzites trabea in sense of Bresadola (and Orth) not believing it to be in the sense of Persoon, who originated the name.

NOTE 725.—**Rhizopogons.** C. W. Dodge who is specializing and recently published on Rhizopogons, has recently worked over specimens that he found in the Lloyd Museum, and they have been labeled in keeping with his determinations. The genus had not been critically worked, and Mr. Dodge is finding that we have a number of interesting species. We are just in receipt from him of a specimen of Rhizopogon maculatus, which is the only species with which he is acquainted of which he did not find material in the Lloyd Museum. He found more specimens in our museum than in all the other museums together that he visited, so he told us.

NOTE 726.—**Polyporus graveolens.** As to further light on the history of this plant, Mr. Burtt Leeper, Salem, Ohio, writes as follows:

"Last spring I found an oak with more than twenty specimens of Polyporus graveolens on it. During the summer I visited it frequently but no new plants appeared, and by October five fully matured specimens were there. Neither the old nor the new plants were odorous." We have requested Mr. Leeper to observe the specimens in other seasons, and learn if the plant is a perennial or an annual. Our belief and Mr. Overholt's testimony (Cfr. Note 315) is that the plant is annual.

NOTE 727.—**Correction.** We are much chagrined to note that we published the name of Entomologist, of the Department of Agriculture of Mauritius, as "D. d' Emmerez." The correct spelling is "d' Emmerez de Charmoy."

NOTE 728.—**Sebacina incrustans—Correction.**—The last four lines under the above in Mycological Notes, p. 744, should refer to Merisma cristatum. It is a lapsus calami as I would refer to it if I were speaking Latin.

NOTE 729.—**Coprinus picaceus.** Mr. J. Ramsbottom, formerly connected with the Mycological Department of the British Museum, and at present in the pathological field in the hospitals of the English Army at Salonika, has found time from his work to go on fungus forages, and has found but one fleshy Agaric, namely Coprinus picaceus, which grew in quantities in sand. As a general thing, I think this is a rather rare plant in Europe. It has an aversion for alluvial soil, and will hardly be found excepting where the sand predominates. It is abundant in the sandy regions of France—at least at Fontainbleau. I do not believe that the species grows with us in the United States. We have a similar, but quite common species growing on rotten logs that Peck named as a variety of Coprinus picaceus, but which has nothing in common with the European plant.

NOTE 730.—**The value of the advertisements.** In 1879 Berkeley sent a list of determinations of Brazilian specimens to a Danish periodical. The list was published with the advertisements. I presume the Danish compositor could not read Berkeley's writing very well, and it resulted in some most unusual authorities. Thus Cladoderris Brasiliensis was named by "Ir" a new abbreviation for Fries. Polyporus sanguincus and many others were named by "J" also an abbreviation for Fries I presume. Cyathus Montagnei was named by "Iul." probably for Tulasne. That was forty years ago and has never been corrected. It does not make much difference though. As long as "scientists" go through the form of writing some name or abbreviation after a plant name that is all that is required. The substance may be entirely wrong but it is not worth correcting as long as the form is correct.

NOTE 731.—**My French.** I have received the following note from Father Boutlou, who kindly translated for me the French in my recent pamphlet on the Myths of Mycology.

"Merci de vos notes que j'ai lues avec grand intérêt surtout vos mythes où figure ma traduction—peut-être un peu défigurée par fautes d'orthographe et fausse punctuation. Mais cela passe."

Everything has its compensation in life. Perhaps it is just as well that the French article had mistakes, for some of the French readers who did not know the circumstances, might have thought that I wrote it in French and any Frenchman knows that an American cannot write French correctly. As a matter of fact the translation was made by Rev. Boutlou and a reproduction was in the hands of our Librarian. Personally, I do not know enough French to enable me to write a sentence of three words and get it correct, although I spent ten or twelve years in intimate, daily contact with the French; sometimes for months at a time without hearing a word of English spoken. I am so familiar with the written language that I read it, hardly conscious whether I am reading English or French, but I speak it very brokenly and have great trouble in making a Frenchman understand what I say.

My best thanks are extended to Father Boutlou for the translations. Father Boutlou has a perfect knowledge of both English and French, putting my ideas into French as a Frenchman would express them. It is the first time I have gotten any one to do it who got the right spirit. The translations I had made in Paris were too stiff and literal. I am sorry, however, that Father Boutlou's translations were not correctly reproduced.

NOTE 732.—**Stereum elegans.** It is a little late to make the correction but our figure 843 of Stereum elegans was made from a specimen received from James Wilson, Australia, instead of Mrs. A. V. Kirkwood, as recorded. I do not know how it happened but presume Mrs. Kirkwood's name was given on the paper in which the specimen was wrapped. It is well for correspondents to always include in each package their name and address, or write on the wrapper, as I frequently have trouble in deciding from whom packages are received. It is better to do that, than to send in a separate letter, for in the number of packages received the letters do not always get with the specimens.

NOTE 733.—**Calvatia craniiformis, from Dr. J. Burton Cleland, New South Wales.** It has finally come to us that Calvatia Gardneri is the same thing and only a foreign name for our common Calvatia craniiformis. We have it from Ceylon, Brazil, Japan, China, Mauritius, and Australia. Berkeley named Calvatia Gardneri from Ceylon, and we have always kept up the name for the foreign plant, not that we ever knew any real difference, but we always had an idea that the foreign plant was different. But when we came to compare these specimens sent by Dr. Cleland we could not tell one from the other. Our American plant is peculiar in its habits. It grows in open woods, woodland pastures, and "wild places." One never finds it in grain fields and old pastures, where Calvatia lilacina is often so abundant. Calvatia sericella (as Lycoperdon from India) and Calvatia crassa (as Lycoperdon from China) are both the same as Calvatia craniiformis. (Cfr. also Letter 67, Note 698.)

NOTE 734.—**Polyporus Clemensiae, from Dr. J. Burton Cleland, N. S. Wales.** This was recently named from the Philippines. (Cfr. Note 574, Letter 65.) It is very close to the common (in the East) Polyporus rubidus, but of much paler color and perhaps (on account of its rarity) should be held as a pale form of rubidus. Polyporus rubidus is abundant from Java and the Philippines, but it has not yet reached me from Australia. Perhaps this is the basis of the rubidus record in the Handbook.

NOTE 735.—**Fomes hornodermus, from Dr. J. Burton Cleland, New South Wales.** This Australian specimen has the old context fuliginous, corresponding to the tropical American form called Fomes sulcatus by Cooke. The new growth is white, but the old context is dark. I believe it is virtually the same species. (Cfr. Note 599.) The type form from Africa has hard, white context, which, when cut, with age takes fuliginous spots. This plant and the American have this feature much more strongly developed, and in this specimen the old context is brown. I never saw it brown before.

NOTE 736.—**Trametes semitosta, from Dr. J. Burton Cleland, New South Wales.** In my Fomes Synopsis as a Fomes, but really a Trametes. The type is a thin plant, hardly ½ cm., but this specimen is 2 cm. thick. The surface is not of as dark a color as the type, but no

doubt will be when it gets to be as old as the type. "Half toasted" is a good name for it now, but not for the type now. Trametes avellanea, recently named from Madagascar, is very close, also Trametes plebeia and Fomes luzonensis (called Fomes nontostus in my pamphlet). Bresadola holds the latter two to be the same as Trametes semitostus, but for me they are not.

NOTE 737.—**Polyporus gilvus, from Dr. J. Burton Cleland, New South Wales.** A form with pubescent surface, entitled to a name.

NOTE 738.—**Polyporus Patouillardii, from Dr. J. Burton Cleland, New South Wales.** I have just compared several collections of Polyporus Patouillardii and Polyporus dryadeus, and I am beginning to think they are just about the same thing. To the eye they are the same; same color of context and pores and peculiar sheen. The European and American plant has hyaline spores, but I have a collection from Hawaii (Cfr. Note 235) with pale-colored spores. When Polyporus Patouillardii was proposed it was supposed to differ from dryadeus in having deep-colored spores and also deep-colored thick, seta-like hyphae in the pore tissue. The Australian plant received from Dr. Cleland and previously from Mr. Cheel has dark spores, but no seta-like hyphae. It is just intermediate and we do not know whether to refer it to one or the other. We had supposed that these species were quite distinct, and they would be if we only had Brazilian and European plants to deal with.

NOTE 739.—**Polyporus (Amaur.) rudis, from T. Hunter, West Africa.** We stated recently that the Australian Polyporus rudis can not be maintained as distinct from the Eastern Polyporus rugosus. We still believe it, but we shall have to revive the name for this specimen, which with its pale context and large pores can hardly be referred to the usual Eastern form with darker context and notably smaller pores. It seems that Nature never grows two polypores of the section Amaurodermus exactly alike.

NOTE 740.—**Lentinus tuber-regium, from T. Hunter, West Africa.** A fine specimen with the sclerotium attached. We gave a full account of this remarkable plant on p. 666 and fig. 959. Surely this African plant is exactly the same as the Australian and Samoan specimens, and the tuber is the same, and in our opinion there is no necessity for but one name for the plant.

NOTE 741.—**Polyporus (Ganodermus) polychromus, from I. M. Johnston, California.** This is the first collection we have gotten. Its characters are the faintly laccate surface and light, pale, zonate context. It belongs to Section 103 of our pamphlet, and was noted on page 372.

NOTE 742.—**Stereum Leichardtianum, from Nelson Núñez, Ecuador.** The main character of this rather rare species is the dense coat of tomentum on the surface of the pileus. It is a rare species, fortunately on account of its unwieldy name. It was originally from Australia, and does not occur, we believe, in the United States (Cfr. Note 350).

NOTE 743.—**Polyporus induratus, from W. B. McDougall, Illinois.** This is a large, hard specimen, 8-10 inches thick and broad. Context pale, hard, but punky. Pores adustus, minute, in a thin layer 3-5 mm. deep. Spores subglobose, 5-6 mic., hyaline, smooth.

Professor McDougall states that it grew on a box elder stump and, when fresh, was very tough, spongy, and the surface rather light-colored, but blackened when bruised or wounded, and darkened in drying. The adustus pores point to Polyporus adustus, but it is not possible to conceive this species as taking such a thick form, besides the spores are entirely different. It reminds me much of Polyporus holmiensis (Apus Polyporus, p. 308, fig. 648), but comparison shows different pores, spores, and texture.

NOTE 744.—**Polyporus lentus, from Rev. J. Rick, Brazil.** We refer this with some doubt to the English species, of which we have seen nothing but very old specimens. It seems to agree with the photograph of the type, and also in its leading features, viz.: the smooth, ochraceous pileus surface, large, favoloid pores. The spores, however, are cylindrical, 3½ x 8, much smaller than the English plant. It is possible that this is Polyporus Penningtonii, as named from Argentina, which, however, is described as castaneous, but otherwise agrees.

NOTE 745.—**Polyporus formosissimus, from Rev. J. Rick, Brazil.** We have at various times received from Rev. Rick plants that could all be referred to forms of Polyporus lucidus. All have the same laccate surface and pale context color.

1st. Polyporus lucidus, the plant of the temperate region, exactly as it grows with us, shape, surface, and spores.

2d. Polyporus formosissimus, which is the same as to the surface, context and spores, but is sub-sessile, with a short, rudimentary stipe. This is practically the same plant we have called Polyporus capensis from South Africa.

3d. Polyporus dorsalis, which is the same in other respects, but has a slender stem, dorsally attached. It is the most common form in the Philippines.

4th. Polyporus renidens. Same to the eye as Polyporus lucidus, but it has globose, rough spores. I only know it from the type at Berlin, which was from Brazil. (Cfr. Note 254.) Classed now in Amaurodermus.

5th. Polyporus (Gan.) perturbatus. This to the eye is the same as Polyporus lucidus, but the spores are darker and strongly rough, much more rough than lucidus spores. It is the plant that was distributed as Polyporus formosissimus by Rev. Rick, and is the basis of our notes (all in error) Nos. 90, 254, and 481. We apply the name perturbatus to it, for the plant has been confused both by Father Rick and myself.

NOTE 746.—**Polyporus (Amaur.) Sprucei, from Rev. J. Rick, Brazil.** This is the first time we have gotten this species. It departs from the type (Cfr. fig. 404, Stip. Polyporoids) in not having pustular pore mouths, but we believe that the pustular pore mouths are features of collections only, and not constant as to species. The spores (12 mic.) are larger than we measured them in the type. They are not perfectly globose, but have slight apiculate thickening on one side.

NOTE 747.—**Polyporus (Amaur.) calcigenus, from Rev. J. Rick, Brazil.** This is a niee collection and the first I have gotten. The only other I have seen is the type at Kew, a single half specimen. The character of the species is the smooth, zoned, dark-reddish bay pileus. The spores of this collection are globose, about 12 mic. in diameter, almost smooth. I made the spores of the type 12 x 16, but there is no question but that is the same species, and I believe this is the first collection since the original.

NOTE 748.—**Polyporus ochroleucus, from Rev. J. Rick, Brazil.** This, which is pale-colored, I would refer as above, and it is the first collection from America that I have so referred. I have always supposed that Polyporus ochroleucus, which is common in the East and usually colored a deep reddish bay, and Fomes Ohiensis, which we have and which is a white plant, were different not only in color but in distribution. But the receipt of a colored collection from Brazil, and recently a white specimen from Australia raises the question if they are not really the same species. As a matter of fact I think they are, for excepting color there is no real difference between them.

NOTE 749.—**Trametes hispidula, from John A. Stevenson, Porto Rico.** We considered this in Mycological Notes, p. 704, fig. 1051, as a small-pored form of Polystictus versatilis, and we are still of that opinion, but this collection is so distinct with the minute pores that we feel it should have a name. In looking through our photographs and records of similar plants we find but one to which it can possibly be referred, viz., Trametes hispidula of Cuba, and we are not sure of that. The types at Kew are little fragments that compare with this as to the photographs, but I think, as a matter of truth, they are small-pored Trametes hispida, rather than small-pored Polystictus versatilis, as I take this plant to be. The coloration is that of versatilis, the general nature that of hispida, and the small pores that of neither. It is better to use Berkeley's name (even if not sure) than to propose a "new one." Polystictus versatilis occurs typically in the American tropics, and we have several collections, also two from Brazil and two from Alabama that are intermediate between versatilis and this collection.

NOTE 750.—**Stereum (pro tem) sepia, from A. Yasuda, Japan.** We label this as above to have a name for it in our museum, but it is not a Stereum or any genus known to me. The material is rather scanty and we should not like to publish it from this collection.

NOTE 751.—**Trametes Japonica, from A. Yasuda, Japan.** Three very similar species of Trametes reach me from Japan and South Africa which do not occur in Europe. They are all much alike, rigid, hard, resupinate, with minute pores. On comparing them the following are the salient features:

Trametes incondita. Pores ochraceous, contrasting with white, mycelial plaques. South Africa.

Trametes sensitivus. Pores and context white. Very sensitive to alkali (turning red at once). Crust brown. Japan.

Trametes Japonica. Context and pore tissue isabelline. Pore mouths white. Japan.

NOTE 752.—**Auricularia papyracea, from A. Yasuda, Japan.** As named by Prof. Yasuda. It is a thinner. more membranous plant than the "Jew's ear" and does not soak out so gelatinous. Otherwise it closely resembles the Jew's ear and is probably only a very thin form.

NOTE 753.—**Coniophora Matsuzawae, from A. Yasuda, Japan.** This was named by Professor Yasuda as Stereum Matsuzawae, but it has elliptical, smooth, colored spores, 6 x 10, and is technically a Coniophora, or a new genus could be based on it. It has thick, hard, woody, brittle, deep-brown context, reminding one somewhat (excepting color) of Stereum rugosum. We have no Coniophora that even suggests it, but that is the only genus where it can be placed now.

NOTE 754.—**Polyporus ostreiformis, from E. D. Merrill, Philippines.** Twelve collections have accumulated under this name, and we have always been in doubt about them. We spent several hours studying them with the microscope, and we think probably six or seven species have been so labeled. All are similar to the eye. We do not name them, however, excepting as to the following: The type material at New York, if correct, and I think it is, as it agrees with my notes at Kew (Cfr. Apus Polyporus, p. 307), has abundant, globose hyaline, smooth pores, and we do not find such spores in any other collection that we had labeled ostreiformis.

Polyporus Manilaensis (ostreiformis in the sense of Bresadola). Pores alutaceous. Spores 2½ x 6. Philippines, Graff, 16795.

Polyporus griseo-durus. Pores and context concolorous. Spores 3-4 x 6-10 usually and many (conidial?) globose 3 to 4. M. Gono, Japan, No. 6. Ussher, Java, No. 29. Van Breda de Haan, Java, 12249. Dr. Van Leeuwen, Java, 12847. Philippines, Weber, 1284.

NOTE 755.—**Polystictus luteus and Polystictus affinis, from E. D. Merrill, Philippines.** We formerly held that the difference between them is that luteus is a thicker plant, but the examination of a series of specimens from the Philippines has convinced us that it is not a practical distinction. We now hold that the only difference is that luteus has a yellow stem and affinis a black stem, and this seems to have been the idea of Nees, who named them both. Polystictus melanopilus is for me a synonym for luteus.

NOTE 756.—**Favolus caperatus.** The Brazilian collection that we referred to Favolus dermoporus (Note 700, and Myc. Notes, page 554, fig. 759) we now believe should be referred to the above species, named by Patouillard from Brazil. Recently we found our notes and photographs of the type of dermoporus, and it is evidently different. Favolus reniformis and Favolus subcaperatus, as named from American tropics, are both for me the same as Favolus caperatus.

The plant belongs to the reddish series and the surface varies in the degree of tomentum.

Letter No. 69—Specimens Desired.

I trust my friends and correspondents will during the present season look out for fungi for me, especially belonging to the following groups:

First. Tremellaceous plants of all kinds. They are easily collected and dried, and they make fine specimens, for they can be soaked up and worked with to good advantage. I am satisfied there are a number of them that are known very little or not at all, particularly the small species.

Second. The large Pyrenomycetes, such as Xylarias, Hypoxylons, and especially the Hypocreas and Hypomyces. While Hypoxylons are common everywhere, we have never gotten them clear and are desirous of material for further work. The same applies particularly to Hypocreas and Hypomyces. There is but one common Hypocrea and but one common Hypomyces, but there are many species of rare occurrence.

Third. The large Discomycetes, such as Geoglossums, Hehellas, Pezizas, etc. While we feel that Durand has practically exhausted the subject as far as the American species are concerned, we should be glad to get additional material in the museum. We have never worked with the large Pezizas at all and know but few of them, but we are anxious for material. If you find a Peziza, please do not fail to pick it up and dry it. An accompanying note giving me its habitat and color when fresh will be very useful in determination.

Fourth. Clavarias. In the past we have not asked for Clavarias, as we did not think much could be done with dried specimens; but we have recently gotten a little idea of them and should be glad to have material for further work. Clavarias are abundant everywhere. Simply pick them up and dry them, and a note giving the habitat and color when fresh is of value.

Fifth. We are always glad to get pileate Thelephoraceæ, although we are unable to do much with the resupinate species. Professor Burt is now engaged in putting the resupinate species into systematic form, and when he has finished we hope to take them up and learn them.

Sixth. The foregoing applies especially to collectors residing in the Eastern States and Europe, from which sections we are not particularly anxious to get polypores, or puff balls, although we shall be glad to determine them for those who wish to learn their species. From those residing in the western or southern sections of the United States we are just as anxious to get polypores and puff balls as we ever were, for these regions have been very little collected.

FOREIGN COLLECTORS

Those who reside in the tropics can collect practically everything they see in the line of large fungi with the exception of the fleshy agarics, and their specimens will be of value and many of them new to our museum. Relatively little collecting has been done in tropical countries, and most of that has been named as "new species." We spent several years investigating the historical specimens that have been named and are anxious to get material to further these studies. No matter how common a fungus may be in any region, if a tropical situation, it is liable to turn out to be of interest.

General Collecting Hints. In order to collect specimens for our museum, all that is necessary for the collector to know is that it is a fungus, and any specimen large enough to be seen should be collected. Simply pick up the specimen—nicely selected specimens are the best—dry, and put aside, and when you get an accumulation send them in. If you are interested in knowing their names, number them and keep specimens numbered to correspond, and we will advise you their names by number.

The phalloids of the tropics are not as well known as they should be, and phalloids make very good specimens if carefully dried. The best way to dry them is to lay them on the window sill, raise the window just a little, so that a current of air will pass over them. Of course anything of a fragile nature such as phalloids should be protected by a box when sent in, and a note giving the color of the fresh specimen would be of value in determination.

Through the aid of many correspondents who have helped to build up the Lloyd Museum there are now probably more specimens of fungi in those sections in which we are working, in this collection, than in the remainder of the museums of the world combined; but we are not satisfied, for the more we get the better acquainted with them we become. We often find we learn very interesting facts about what are known as old and common species. Any one whose taste leads them to pursue Natural History work or to excursions in the woods or wild places will find abundant material to collect, no matter where they are located. It is not a great deal of trouble to pick up the specimens, dry them, and forward them. Specimens should always be dried, for otherwise they are liable to mold and spoil on the way. It is hardly worth while to poison them, for they are rarely injured by insects when we get them, and we put them through a process as soon as they come into our hands. Nor is it worth while to send them in formalin. Most fungi make better specimens dried than when preserved in liquid, which often swells them out of shape, and sometimes disintegrates them entirely. Particularly is this true of tremellaceous plants. If you wish to send a specimen that changes its shape in drying it is a good plan to simply wrap it in cotton that has been moistened with formalin and pack it in a box. Sometimes we have received specimens in this way which have been on the road a month, and they reached me in as good condition as if freshly collected. Specimens put in formalin solution or in a liquid rarely reach me in good condition.

I am not unappreciative of the kindness of the hundreds of correspondents in all parts of the world who have brought together in the Lloyd Museum the largest collection of fungi in the world, and I solicit a continuance of their favors.

Those residing in foreign countries that do not have parcel-post arrangements with the United States may send their specimens to my English address, but in countries which have such arrangements it is best to send direct to me.

C. G. LLOYD,
224 West Court Street,
Cincinnati, Ohio.

C. G. LLOYD,
95 Cole Park Road,
Twickenham, England.

Acknowledgment of specimens received since last report. My best thanks are extended to those who favor me by forwarding to me their collections of the fungi of their regions, and particularly those who live in the tropics. Every day it becomes easier to determine specimens, for the common species have mostly taken definite form and I recognize the larger part of them at sight. Still each lot received brings considerable work, and though I am behind at present, I hope that correspondents will not hesitate to send in their collections on that account. They will all be worked over in time and those that are rare or of special interest will be published. All the large fungi are desired excepting the fleshy Agarics. We are particularly interested now in the little Laschias and in Xylarias and tremellaceous plants. For some reason collectors do not usually send in Tremellas. They dry so poorly that the impression seems to be that it is not worth while drying them. But there is no class of specimens that makes better plants to work with than those of tremellaceous nature. A few minutes soaking brings them back to the same condition as when collected. They may shrink to almost nothing in drying, but they are good specimens, nevertheless. We hope that our friends in the United States and Europe will watch out for Tremellas, especially the small species, for I am sure that we have many that we know nothing about.

In the following list we have put in italics those that on account of rarity or for some other reason are of especial interest, and will be published in Mycological Notes, and most of them with illustrations. But do not get the impression that we only want rarities or unusual things. On the contrary, we are more interested in the "old" species, their abundance, distribution, and variation, and collections of the most common species, especially from the tropics, are always welcome.

In my printed Letter I do not give authority for names, believing that the binomial should represent a plant name, but in acknowledging the specimens to my correspondents I give the "authority" in event they desire to use the same. All specimens are acknowledged by personal letter as soon as I get time to study and report on them. Foreign correspondents may send specimens to my English address, and they will reach me promptly, although in countries which have direct parcel post arrangements with the United States it is best to send them by parcel post direct to me. Specimens may be sent to either of the following addresses:

C. G. LLOYD,
224 West Court Street,
Cincinnati, Ohio.

C. G. LLOYD,
95 Cole Park Road,
Twickenham, England.

Cincinnati, Ohio, April, 1919.

ARCHER, W. A., U. S. Army, A. E. F., France:

Clathrus cancellatus.

Polystictus abietinus. (See Note 757.)—Coniophora arida.—Stereum hirsutum.

BALLOU, DR. W. H., New York, N. Y.:

Corticium effuscatum.—Trametes malicola.—Polyporus adustus.—Polystictus versicolor.—Merulius tremellosus.—Phlebia radiata.—Polystictus rigens.—Polyporus malicolus.—Polyporus tephroleucus.—Hydnum Blackfordae. (See Note 758.)

BARTHOLOMEW, ELAM, Washington:

Xylaria Hypoxylon.

BEARDSLEE, H. C., North Carolina:

Sebacina incrustans.—Stereum sericeum.—Stereum subpileatum.—Stereum fasciatum.—Fomes applanatus.—Fomes fomentarius.—Polyporus tephroleucus.—Dacryomyces hyalinus. (Published in Myc. Notes, page 828.)—Poria undata.—Polyporus stipticus.—Exidia recisa.—Poria Tulipifera.—Tremella indecorata.—Dacryomyces aurantia.—Dacryomyces stillatus.—Poria viticola.—Peniophora purpurea.—Exidia glandulosa.—Hydnum chrysocomum.—Irpex cinnamomeus.—Poria rhodella.—*Dacryopsis nuda.*—Dacryomyces caesia.—Hornomyces aurantiacus.—Exidia viscosa.

BIJL, P. VAN DER, South Africa:

Polyporus sulphureus.—Trametes trabea.—Dacryomyces deliquescens.—Lentinus lepideus.—Polystictus sanguineus.—Trametes cfr. protea.

BOUTLOU, REV. A., West Virginia:

Polyporus adustus.—Naucoria arvalis.—Lycoperdon piriforme.—Lycoperdon gemmatum.—Calvatia lilacina.—Calvatia craniiformis.—Bovistella Ohiensis.—Stereum Burtianum.—Polystictus versicolor.—Stereum fasciatum.—*Dacryomitra dubia.* (Published in Myc. Notes, page 825.)—Polyporus trabea.—Collybia tuberosa.—Polyporus albellus.—Trichia favoginea.—Tremella mesenterica.—Cyathus striatus.—Trametes trabea.—Craterellus cornucopioides.—Merulius tremellosus.—Cyclomyces Greenii. (Rare.)—Polyporus arcularius.—Stereum rubiginosum.—Tremellodendron merismatoides.—Polyporus trabeus.—Phlebia radiata.—Polyporus dichrous.—Hydnum ochraceum.—Polyporus betulinus.—Polystictus tulipifera.—Polyporus giganteus.—Polyporus frondosus.—Daedalea unicolor.—Stereum sericeum.—Tremellodendron pallidum.—Bovista pila.—Stereum spadiceum.

BRENCKLE, DR. J. F., Arkansas:

Stereum complicatum.—Polystictus sanguineus.—Calvatia craniiformis.—Polystictus conchifer.—Irpex cinnamomeus.—*Polystictus smaragdinus.* (Published in Myc. Notes, page 818.)—*Hydnum pulcherrimum.*—Polystictus hirsutus.—Lenzites corrugata. (See Note 759.)—Lycoperdon umbrinum.—Polystictus versicolor.—Irpex pachylon.—Schizophyllum commune.—Poria xanthospora. (See Note 760.)—Poronia oedipus.—Polystictus hirsutus.—Polyporus sessilis.—Pleurotus nidulans.

BRENCKLE, DR. J. F., North Dakota:

Trametes Bulliardii.—Daldinia vernicosa.—Auricularia auricula-Judae.—Geaster hygrometricus.—Nummularia Bulliardii.—Diatrype stigma.—Diatry-

pella verrucaeformis.—Hypoxylon multiforme.—Hypoxylon Broomeianum (?) —Hypoxylon rubiginosum.—Polyporus elegans.

The following named by Dr. Brenckle: Puccinia absinthii.—Puccinia universalis.—Puccinia intermixta.—Puccinia epilobii.—Puccinia Balsamorrhizae.—Puccinia Jonesii.—Puccinia plumbaria.—Puccinia Holboellei.—Puccinia crepidis-acuminatae.—Crytosphaeria populina.—Teichospora abducens. —Erysiphe graminis.—Nigredo intricata.—Ustilago bromivora.—Plasmopora Geranii.—Plasmopora permunda.—Rosellinia parasitica.

BURNHAM, STEWART H., New York:

It is always a pleasure to receive Mr. Burnham's specimens. They are well selected, ample in quantity, and excellent in quality. And Mr. Burnham always sends with each specimen collection notes that add much to their interest. If every one sent as nice specimens as Mr. Burnham, the work in which we are engaged would be much more satisfactory to us.

Polyporus albellus.—Trametes suaveolens. (See Note 761.)—Exidia recisa.—Lycoperdon umbrinum.—Geaster minimus.—Poria ferruginosa.—Polyporus admirabilis.—Dacryomyces stillatus.—Cyathus stercoreus.—Polyporus albellus.—Fistulina hepatica.—Tylostoma simulans.—Polyporus mollis. —Polyporus osseus.—Poria rhodella.

CAVE, G. H., India:

Polystictus tabacinus.—*Lenzites betulina.*—Polystictus Parishii. (See Note 762.)—Stereum princeps. (See Note 763.)—Polyporus Menziesii.—Fomes senex.—Daedalea gibbosa.—Polyporus adustus.—Polyporus ilicicolor.—Polyporus radiatus?—Auricularia auricula-Judae.—Stereum hirsutum.

CLELAND, DR. J. BURTON, New South Wales:

Polystictus ochraceus.—Trametes lilacino-gilvus.—Polystictus versatilis.—Polyporus gilvus.—Fomes gilvus.—Trametes picta.—Lenzites repanda.—*Lenzites Muelleri.*—Polystictus nebularis. (See Note 764.)—Polystictus Friesii. (See Note 765.)—Polyporus Patouillardii.—*Lenzites bicolor.—Trametes epitephra.*—Lachnocladium furcellatum.—Geoglossum capitatum.—Polystictus nigricans.

COKER, W. C., North Carolina:

Lycoperdon pseudopusillum.

DEMANGE, V., Tonkin:

Polyporus zonatus.—Trametes Persoonii.—Polystictus occidentalis.—Polystictus Persoonii.—Polystictus luteo-olivaceus.—Polyporus rubidus.—Stereum Bresadoleanum.—Polystictus subaffinis.—Lentinus subnudus.—*Irpex caespitosa.*—Laschia Tonkinensis.—Trametes strigata.—Auricularia cornea. (See Note 766.)—Hexagona tenuis.—Polystictus versatilis. (See Note 767.)—Polyporus gilvus.—Phallus gracilis.—Irpex concors.—Xylaria papulis.—Trichoscypha Hindsii.—Montagnites Candollei.—Polyporus sulphureus.—Merulius similis.—Polystictus polyzonus.—Calvatia lilacina.—Schizophyllum commune.—Guepinia spathulata.—Polystictus affinis.—Polystictus xanthopus. —Calvatia lilacina.—Fomes (Gan.) applanatus.—Stereum surinamense.—Lentinus strigosus.—Cladoderris Thwaitesii.—Lenzites repanda.—Polystictus occidentalis.—Fomes (Gan.) applanatus.—Trametes Meyenii.

DEMETRIO, C. H., Missouri:

Stereum frustulosum.—Daedalea ambigua.—Polyporus fuscus.—Trametes hispida.—Lenzites saepiaria.—Polystictus biformis.

EASTWOOD, ALICE, California:

Gomphidius viscidus and some dried agarics not determinable by me.

ESPINOSA, MARCIAL R., Chile:

Bovista brunnea.—Polystictus fulvicolor.—Cyttaria Darwinii.

FISHER, GEORGE L., Texas:

Lentinus strigosus.—Polystictus abietinus.—Polyporus gilvus.—Bovistella Ohiensis.—Thelephora terrestris. (See Note 770.)—Lenzites corrugata.—Polyporus (Gan.) sessilis.—Lycoperdon rimulatum.—Pleurotus sapidus.—Polyporus Schweinitzii—Stereum complicatum.—Stereum spadiceum.—Polysaccum pisocarpium.—Calvatia cranliformis.—Calvatia lilacina.—Scleroderma flavidum.—Scleroderma Geaster.—Trametes hydnoides.—Fomes marmoratus.—Merulius tremellosus.—Polystictus focicola.—Polystictus pargamenus.—Hydnum australe. (See Note 768.)—Irpex pachylon. (See Note 769.)

GEE, N. GIST, China:

Fomes applanatus.—Schizophyllum commune.—Auricularia auricula-Judae.—Lentinus lepideus.—Cyathus stercoreus.—Polyporus Puttemansii.—*Isaria Mokhanshawii*.—Mycelial pad. Fungus indeterminable.

GOSSWEILER, J., West Africa:

Polystictus flava.—Polystictus leoninus.—Xylaria Schweinitzii.—Auricularia Moellerii.—Fomes applanatus.—Poria aurantiotingens.—Ustulina vulgaris.—Daldinia concentrica.—Polyporus (Gan.) lucidus.—Polystictus occidentalis.—Stereum involutum.—Schizophyllum commune.—Fomes mangifera?—Xylaria digitata??

GOWDEY, W., Africa:

Cordyceps Lloydii.

GRELET, REV. L. J., France:

Geaster saccatus. (See Note 771.)

GRIFFIN, D. B., Vermont:

Bulgaria inquinans.—Helvella crispa.—Hydnum rufescens.—Xylaria corniformis.

GRIFFITHS, DAVID, District of Columbia:

Mitremyces lutescens.—Mitremyces Ravenelii.

HIBBARD, MISS ANN, Massachusetts:

Trametes trabea.—Calocera cornea.—Corticium salicinum.—Lycogala Epidendrum.—Dacryomyces aurantia.—Enteridium splendens.—Polyporus betulinus.—Polyporus pubescens.—Lycoperdon piriforme.—Merulius tremellosus.—Helotium citrinum.—Polystictus biformis.—Polyporus dichrous.—Lycoperdon Turneri.—Stemonitis Smithii.—Peziza badia.—Tubercularia vulgaris.—Thelephora albido-brunnea.—Scleroderma Cepa.

HUNTER, T., West Africa:

Polyporus (Amaur.) rugosissimus.—Fomes lamaoensis.—Trametes ver-

siformis.—Trametes roseolus.—Polystictus versatilis.—Polyporus velutinosus. —*Polyporus intactilis.*—Polystictus fusco-zonatus. (See Note 772.)—Polyporus vinosus.—Polyporus licnoides.—Polystictus Menziesii.—Fomes Caryophyllii.—Polystictus Persoonii.—Polyporus (Amaur.) auriscalpium. (See Note 773.)—Fomes pectinatus.—Pyrenopolyporus Hunteri. (See Note 774.)—Polyporus luteo-nitidus.—Polyporus durus.—Xylaria variabilis.

JOHNSTON, DR. I. M., California:

Calvatia sculpta. (See Note 775.)—Exidia glandulosa.—Phlebia radiata. —Fomes Bakeri.—Lycoperdon Turneri.—Polyporus gilvus.—Fomes applanatus.—*Catastoma Uplandii.*—Polyporus dryadeus. (See Note 776.)—Gyrophragmium Delilei.—Trametes carnea.—Polystictus versicolor.—Polystictus hirsutus.—Poria undata.—Poria aurantica.—Lycoperdon pseudopusillum.—Catastoma Johnstonii.—Lycoperdon pusillum.—Polyporus Schweinitzii.—Bovistella dealbata.—Catastoma circumscissum.—*Catastoma Brandegeei.*—*Catastoma Johnstonii.*—Geaster hygrometricus.—Ustulina vulgaris.—Polyporus hispidus. (See Note 777.)—Polystictus ochraceus.—Stereum occidentale. (See Note 778.)—Hymenogaster Behrii. (See Note 779.)—Hypoxylon malleolus.—Polyporus adustus.—Fomes roburneus.—Polystictus versicolor.—Phallus imperialis.—Stereum albo-badium.—Polystictus abietinus.—Fomes Bakeri.

KREKE, REV. MARCUS, Indiana:

Thelephora cuticularis.—Thelephora albido-brunnea?—Merulius lacrymans.—Trametes malicola.—Stereum subpileatum.—Polyporus fumosus.—Hydnum velutinum.—Hydnum scobiculatum.—Trametes Krekei. (See Note 780.)—*Tremella vesicaria.*—Stereum fasciatum.—Stereum sericeum.—Polyporus adustus.—Daedalea ambigua.—Xylaria Hypoxylon.—Stereum frustulosum.—Polyporus Berkeleyi.—Polyporus giganteus.—Geaster saccatus.—Auricularia auricula-Judae.—Polyporus cristatus.—Xylaria polymorpha.—Hydnum pulcherrimum.—Hydnum adustum.—Polyporus rufescens.—Poria tulipifera.

LATHAM, ROY, New York:

Cyathus vernicosus.—Fomes pini.—Stereum spadiceum.—Lenzites corrugata.—Radulum pallidum.—Polystictus hirsutulis.—Phlebia merismatoides. —Pleurotus niger.—Polyporus albellus.—Stereum (Hym.) Curtisii.—Lenzites betulina.—Pleurotus sapidus.—Clavaria fuciformis.

LEWIS, JOHN E. A., Japan:

Polystictus pargamenus.—Schizophyllum commune.—Favolus europaeus. (See Note 781.)—Auricularia auricula-Judae.—Polystictus Persoonii.—Polystictus sanguineus.—Lenzites trabea.—Polystictus versicolor.—Fomes applanatus.—Cyathus stercoreus.

McFARLAND, F. T., Kentucky:

Calvatia cranliformis.—Polyporus trabeus.

MERRILL, E. D., Philippine Islands:

Lentinus praerigidus.—Schizophyllum commune.—Lentinus subnudus.—Stereum Ostrae.—Stereum perlatum.—Polyporus scruposus.—Stereum (Hymenochaete) tenuissimum.—Stereum (Hymenochaete) cacao.—Stereum (Hymenochaete) molle.—Stereum (Hymenochaete) villosum—*Stereum corruge.* (Published in Myc. Notes, page 826.)—Stereum papyraceum.—Clado-

derris infundibuliformis.—Stereum spectabile.—Stereum (Hymenochaete) spissum.—Stereum Bresadoleanum.—Stereum philippinensis.—Stereum rimosum.—Stereum vespilloneum.

MILLE, REV. LOUIS, Ecuador:

Lanopila Wahlbergii.—Merulius lacrymans. (See Note 782.)—Polyporus adustus.

NELSON, N. L. T., Texas:

Schizophyllum commune.—Stereum fasciatum.—Polystictus versicolor.—Polystictus sanguineus.—Tubercularia vulgaris.—Hypochnus rubro-cinctus.

OVERHOLTS, L. O., Pennsylvania:

Lycoperdon piriforme. (See Note 783.)

OVERHOLTS, L. O., New Hampshire:

Dasyscypha Agassizii.—Stereum tuberculosum.

PARISH, S. B., California:

Tylostoma campestris.

PEARSON, ARTHUR A., England:

Poria undata. Mr. Pearson is disposed to question my determination, but I did the best I could.

PETCH, T. (Specimens from Mauritius.)

Hexagona lignosa.

PETCH, T., Ceylon:

We are very much gratified to have a renewal of interest on the part of Prof. Petch. Ceylon is "type locality," but a large part of the "types" were misnamed. Prof. Petch is doing a fine work in getting this tangle straightened out.

Polyporus zonalis.—Polyporus abruptus.—Trametes Meyenii.—Trametes picta. (See Note 784.)—Trametes cingulata.—Polyporus violaceo-cinerascens. (See Note 785.)—Polyporus ochroleucus.—Fomes lamaoensis.—Fomes subresinosus.—Daedalea flavida.—Polyporus abruptus.—Polyporus licnoides.—Trametes serpens.—Trametes straminea. (See Note 786.)—Fomes pachyphloeus.—Polyporus collosus.—Fomes endotheius.—Fomes annularis.—Polyporus mangifera.—*Xylaria haemorrhoidalis.—Xylaria apiculata.—Xylaria anisopleura.—Xylaria nigripes.—Xylaria furcata.—Xylaria plebeja.—Xylaria vagans.—Xylaria allantoidea.—Xylaria muscandae.—Xylaria scopiformis?—Xylaria multiplex.—Xylaria myosurus.*—Hexagona Burchellii.—Polyporus introfuscus. (See Note 787.)—Polyporus secernibilis. (See Note 788.)—Polyporus stereinus.—Polyporus velutinosus.—Polyporus grammocephalus.—Trametes Persoonii.—*Polyporus nongravis.*—Fomes Senex.—Polyporus intactilis.—Daedalea tenuis.—Merulius similis. (See Note 789.) Lenzites Japonica. (See Note 790.)—Trametes nubila. (See Note 791.)—Trametes Muelleri.—Polyporus Clemensiae.—Fomes gilvus.—Polyporus fumoso-olivaceus. (See Note 792.—Polyporus rigidus.—Polyporus velutinosus.—Trametes roseola.—Polystictus cinerescens.—Polystictus tenuiculus.—Fomes lamaoensis. (See Note 793.)

REINKING, OTTO A., Philippines:

Lenzites repanda.—Daedalea flavida.—Polyporus lignosus.—Fomes pachyphloeus.—Polyporus lucidus.—Fomes calignosus.—Polyporus vinosus.—

Auricularia auricula-Judae.—Auricularia cornea.—Trametes Meyenii.—Fomes applanatus.—Stereum involutum.—Trametes Persoonii.—Polystictus tabacinus. —Cyathus Montagnei.—*Cyphella fusco-disca.* (Det. Burt.)—Pleurotus striatulus.—Polystictus sanguineus.—Trametes devexa.—Polystictus flavus.—Fomes calignosus. (See Note 794.)—*Thelephora radicans.*—Fomes fastuosus.—Tremella foliacea.—Polyporus anebus.—Trametes Persoonii.—Polyporus megaoporus.—Lentinus squarrosulus. (See Note 795.)—Polystictus affinis.—Polyporus nitidus.—Polystictus xanthopus.—Trametes Persoonii.—Fomes applanatus.—Polyporus amboinensis. (Rare in Philippines, not the common plant so misreferred.)

RICK, REV. JOHAN, Brazil:

Rev. Rick is collecting most liberally. We have a large number of specimens from him on hand that we have not yet found time to study.

Polyporus caryophyllus.—Polyporus cremeus.—Trametes hydnoides.—Polyporus modestus.—Polystictus byssinus.—Polyporus lignosus.—Xylaria axifera.—Polyporus adustus.—Polyporus delectans. (Somewhat doubtful.)—Kretzschmaria lichenoides.—Fomes rimosus.—Fomes pectinatus.—Polyporus cubensis.—Polystictus zonatus.—Polyporus Blanchetianus.—Polyporus discoideus. (See Note 796.)—Polyporus meleagris. (See Note 797.)—Lentinus villosus.—Fomes pectinatus.—Fomes robustus.—Polystictus pinsitus.—Cordyceps gracilis.—*Pseudohydnum guepinoides.*—Heterochaete Ste. Catherinae.—Isaria fiabelliformis.—Polyporus Rhipidium.—Polyporus Leprieurii.—Calvatia craniiformis.—Calvatia rubroflava.—Lycoperdon fuligineum.—Irpex subcoriaceus. (See Note 813.)—Polyporus luteo-nitidus.—Polyporus licnoides.—Xylaria deserticola.—Polystictus Friesii.—Fomes perlevis. (See Note 798.)—Polystictus versatilis.—Polystictus rigens.

Xylaria apiculata.—Xylaria faveolis.—Polyporus supinus.—Polyporus valenzuelianus.—*Polyporus (Amaur.) subrenatus.*—Polystictus Drummondii. —Pyronema omphaloides.—Polystictus fulvo-umbrinus.—Septobasidium velutinum.—Polystictus zonatus.—Polystictus hirsutulus.—Xylaria luxurians. —Xylaria arbuscula.—Xylaria anisopleura.—Xylaria cristata.—Polyporus dorsalis. (See Note 799.)—Xylaria corniformis.—*Polystictus pinsitus.*—Geaster saccatus.—Geaster vittatus.—Geaster Englerianus.—Geaster pectinatus. (See Note 800.)—Geaster plicatus.—*Dacryomitra depallens.*—*Xylaria Brasiliensis.*—Geaster mirabilis.—Geaster violaceus.—Geaster subiculatus.—Geaster Hieronymii.—Geaster triplex.—Geaster Scleroderma.

Auricularia mesenterica.—Polyporus Leprieurii.—Hydnum spongiosum.—Polyporus Blanchetianus.—Polyporus hemicapnodes.—Polyporus rheicolor.—Polystictus pinsitus.—Xylaria lancea.—Fomes gibbosus.—Fomes applanatus.—Polyporus gilvus.—Erinella longispora.—Chlorosplenium aeruginosum.—Polyporus Puttmansii.—Lentinus velutinus.—Polystictus hirtellus.—Polystictus Friesii.—Fomes applanatus.—Polystictus versatilis.—Trametes cubensis.—Polyporus valenzuelianus.—Polystictus pinsitus.—Xylaria lancea.—Reticularia Lycoperdon.—*Xylaria corniformis.*—Polyporus licnoides.—Polyporus supinus.—*Fomes gibbosus.*—Xylaria grammica.—Hydnum ochraceum.—Xylaria multiplex.—Stereum bicolor.—*Xylaria comosa.*—Polyporus rheicolor.—Polystictus tabacinus.—Polyporus olivaceus (but not distinct from supinus). —Polyporus megaloporus.—Xylaria grammica.—Polyporus dichrous.—Trame-

tes fibrillosa. (Thin form of hydnoides.)—Polyporus cremeus.—Xylaria herculea.—Xylaria allantoidea.

RITCHIE, A. H., Jamaica:
Isaria Ritchiei.—Trichoscypha Tricholoma.

RODWAY, L., Tasmania:
Polystictus brunneo-leucus. (See Note 801.)—Poria Archeri. (See Note 802.)—Fomes applanatus.—Polystictus velutinus.—Poria vaporaria.—Polystictus flavus.—Polystictus versicolor.—Polystictus ochraceus.—Polyporus semisupinus (not sure).—Polystictus ectypus.—*Polyporus suaderis.*—Polyporus Wilsonianus. (See Note 803.)—Polyporus pubertatis. (See Note 804.)—Polyporus inamoemus.

ROSEN, H. R., Arkansas:
Lycoperdon piriforme.—Favolus Europaeus.—Calvatia craniiformis.—Polyporus gilvus.—Polyporus squamosus.—Tuckahoe.

STERLING, E. B., collection at Plattsburg, New York:
Rhizina undulata. (See Note 805.)—Polystictus perennis.—Xylaria polymorpha.—Peziza acetabulum.—Lenzites saepiaria.—Polyporus elegans.—Ustulina vulgaris.—Polystictus hirsutellus.—Bovista plumbea.—Lycoperdon cruciatum.—Catastoma circumscissum.—Leotia lubrica.—Helvella lacunosa.—Macropodia macropus.—Thelephora Caryophylla.—Thelephora spiculosa.

WEIR, JAMES R., Montana:
Polyporus tephroleucus var. scruposus.

WEST, ERDMAN, New Jersey:
Phlebia radiata.—Irpex laeticolor.

YASUDA, A., Japan:
Calocera furcata.—*Tremella candida.*—Cantharellus floccosus.—Cantharellus albidus?—Lycoperdon spadiceum.—Hydnum rufescens.—Polyporus adustus.—Stereum lilacino-fuscum.—Irpex consors.—*Trametes truncatispora.*—*Trametes heteromorpha.*—Hymenochaete attenuata.—Polyporus Komatsuzakii (as named by Yasuda).—Diatrypa stigma.—Tramella lutescens.—*Trametes serpens.—Lenzites styracina.*—Geaster mammosus.—Racodium xylostroma (as known in old days).

ZENKER, DR. G., Cameroun, Africa:
Polyporus sacer (fine specimen).—Thelephora radicans.—*Lachnocladium brasilicuse.* (Published in Myc. Notes, p. 827.) Polyporus trulliformis. (See Note 806.)—Polyporus salebrosus.

NOTE 757.—**Polystictus abietinus, from W. A. Archer, Saint Nazaire, France. While this collection differs from the common form to an extent that we feel would entitle it to a name, we prefer not to give it one. It grew on bare ground, densely imbricate. The pores, surface, and cystidia are the same, but the pure white context is much thicker and, when soaked, the plant appears somewhat gelatinous. It is probably only an aberration due to its habitat, but at first hardly suggested the species at all.**

NOTE 758.—**Hydnum Blackfordae.—Dr. W. H. Ballou advises me that I was mistaken in my statement that this species grows only in the region of Boston. He states it is very common in moss along streams and in the heavily wooded oak swamps in his collecting region, and that it is one of the species to appear late in the season after most of the fleshy Hydnums are gone. He usually finds it late in September or early in October. He also**

states that when fresh it is sulphur yellow, which is new to me, as my impression from the dried plants was that its color was dark greenish and that there was but one other species of this same color, viz. Hydnum geogenium.

NOTE 759.—**Lenzites corrugata, from Dr. J. F. Brenckle, Arkansas.** We have usually recorded this plant under the above name, although there is no doubt that it is only a thin, lenzitoid, southern form of Daedalea confragosa. It is entitled to a name, but has had so many (with no application to it), that it is a question what name to adopt. It has been called albida, zonata, and discolor, and it is neither white, zonate, nor discolored. Klotzsch's name, which we use, is doubtfully correct (as to his specimen at Berlin), but is the one Berkeley used, and we have employed it so long we do not feel like trying to change it.

NOTE 760.—**Poria xanthospora, from Dr. J. F. Brenckle, Arkansas.** This is a rather rare species and we never collected it but once, many years ago. In the southwest it seems more common and we get specimens this season from George L. Fisher, Texas, and Dr. Brenckle, Arkansas. It is exceptional in its habits, growing under the bark, which it finally pushes off. Every time I have received it, these habits are noted by the collector. Cfr. also Letter 66, Note 592.

NOTE 761.—**Trametes suaveolens, from Stewart H. Burnham, New York.** This is not a common species and we do not find it around Cincinnati. Usually it is on willow, but Mr. Burnham finds it sometimes on poplar.

NOTE 762.—**Polystictus Parishii, from G. H. Cave, India.** As a usual thing we do not advocate trying to name the various forms of the polymorphic Polystictus versicolor, but this Indian form varies so much from anything that grows in Europe that we feel it should be separately labeled. We use a name proposed by Cooke for an Indian remnant at Kew that may be this and may not, but that is immaterial for it is close, and if not the same no one will ever know the difference. These little remnants should not have been named at all, but the name comes in handy.

Pileus, thin, plane, about two inches in diameter, reduced at the base. Surface pale brown with narrow, indistinct zones, finely pubescent. Context and minute pores white, the usual thing in Polystictus versicolor.

NOTE 763.—**Stereum princeps, from G. H. Cave, India.** A frequent species in the East and, when old, a thick, rigid species. Young specimens have a different appearance from the old ones. When young, the hymenium is not evident to the eye excepting under the microscope the numerous hyaline dendrophytes. When old, the hymenium is thick and white and the dendrophytes are not so evident.

NOTE 764.—**Polystictus nebularis, from Dr. J. Burton Cleland, New South Wales.** This is a thick, rigid form of Polystictus Friesii with small pores, but the same otherwise. It was named from Brazil, but only known to me heretofore from the type.

NOTE 765.—**Polystictus Friesii, from Dr. J. Burton Cleland, New South Wales.** This is given in the Handbook, but I have always doubted the reference, as I never noted the plant before excepting in the American tropics where it is very common and has many names. I can not distinguish Dr. Cleland's plant from our American collection, hence will now have to concede the plant in Australia. It is surely rare if it occurs at all in the Eastern tropics, and as a usual thing the Australian species occur in the Eastern rather than the American tropics.

NOTE 766.—**Auricularia cornea, from V. Demange, Tonkin.** As named and figured by Ehrenberg. This, when soaked out, is exactly Ehrenberg's figure. But the "species" is only a pale form of the cosmopolitan Auricularia auricula-Judae (Cfr. Myc. Notes, p. 783).

NOTE 767.—**Polystictus versatilis, from V. Demange, Tonkin.** There is a lot of variation in this species. This collection, thin with a scabrous, subzonate surface, is so different from the ordinary that I did not recognize it at first.

NOTE 768.—**Hydnum australe, from George L. Fisher, Texas.** There are two forms of Hydnum pulcherrimum with us, as will be shown in Myc. Notes (not yet published). This southern form, while I think is only a thin form, yet is so different from our northern plant that I think it should have a name. The flesh in this specimen is only 4-5 mm. thick and compact. In the northern type form the flesh is 1-2 cm. thick and the upper is resolved into fibrils. Both are white plants, turning red in drying, particularly the spines. I find no cystidia on this southern form, and the spores are about 3x5.

NOTE 769.—**Irpex pachylon, from George L. Fisher, Texas.** As illustrative of how easy it is to make "new species," Irpex pachylon as it grows both in Europe (rarely) and with us (frequently) is usually dimidiate, imbricate, with pilei about a cm. thick. This specimen is ungulate, solitary, and the context is over two inches thick, but on comparison there is no question it is the same thing, a condition brought about by some reason, we do not know what. In our literature Irpex pachylon passes as Irpex crassus, Berkeley being able to find "new species" in America before he learned the old species of Europe. The spores are abundant, globose about 6 mic. with large guttae. Cystidia, none.

NOTE 770.—**Thelephora terrestris, from George L. Fisher, Texas.** This form is almost worthy of a distinct name. Unusually regular, mesopodial and with the surface distinctly fuliginous, zoned.

NOTE 771.—**Geaster saccatus, from Rev. L. J. Grelet, France.** Exactly the same as we have so common in the United States under this name. The mouth is definite and strongly

distinct from the endoperidium. In Europe usually what I consider as practically the same plant, the mouth is indefinite and it is called Geaster fimbriatus. However, definite mouths are not as rare in Europe as indefinite mouths are with us. From Europe I have twenty-five collections with indefinite mouths and eight with more or less definite mouths. From the United States I have more than a hundred collections with strongly marked definite mouths and only one (from H. C. Beardslee, North Carolina) with an indefinite mouth.

NOTE 772.—**Polystictus fusco-zonatus, from T. Hunter, West Africa.** Pileus reduced to a small disc-like attachment. Color mummy brown. Surface glabrous, zonate with raised zones. Context concolorous with deeply colored hyphae. Pores slightly darker than the surface, small, round, regular. Cystidia none. Spores not found.

This is quite close to and possibly the same as Polyporus brunneo-maculatus from India, but not the same I judge from my notes and photograph of the type. It belongs to Section 17, where I think Polyporus brunneo-maculatus is better classed than in Section 15 as in my pamphlet.

NOTE 773.—**Polyporus (Amaurodermus) auriscalpium, from T. Hunter, West Africa.** This is the first collection from Africa. Frequent in the American tropics. It is the same as Polyporus trulliformis of Africa, excepting it has smooth instead of reticulate spores.

NOTE 774.—**Pyrenopolyporus Hunteri, from T. Hunter, West Africa.** Resupinate specimen. As we stated when we published it, the plant undoubtedly has names in the museums of Europe as Nummularia. We have since gotten it from Brazil and conclude it is what Stärback called Penzigia Polyporus from a resupinate piece, although we may be mistaken. At any rate, we hold that erroneous work based on undeveloped material and put in the wrong genus has no validity.

NOTE 775.—**Calvatia sculpta, from Dr. I. M. Johnston, California.** This species is only known from the higher altitudes of the Pacific coast mountain ranges. Dr. Johnston writes, "I have attempted to bring the species out of the mountains several times, and every one of them has lost its peridium before I got it home. It is certainly a Calvatia and not a Lycoperdon."

NOTE 776.—**Polyporus dryadeus, from Dr. I. M. Johnston, California.** A different form from our Eastern plant and perhaps merits a special name. It has harder context, thinner margin, and fairly abundant setae. The spores are globose, 6-7 mic., very pale color, by which it can be told from Polyporus corruscans.

NOTE 777.—**Polyporus hispidus, from Dr. I. M. Johnston, California.** Spore variations in Polyporus hispidus. We have from Dr. Johnston a collection which to the eye and in its grosser characters is the same as Polyporus hispidus of Europe, but the spores are not the same. In the European plant they are more globose and larger (10-12 mic.). In this plant they are more elliptical and measure about 6 x 10. The question arises what to call it. We have referred it to Polyporus hispidus and we believe it to be a spore variation of the same plant. But one could hold it to be a "new species," and if he showed a drawing of the spores in contrast it would be hard to dispute it. Every taxonomist has his idiosyncrasies. The old fellows judged only by general appearances. They were very often wrong. The new fellows depend on anatomical dissections. While I do not think they are as often wrong as the old fellows, I do not believe they are always correct. Plants all vary, and I can not see why spores should not vary within reasonable limits as well as any other character.

NOTE 778.—**Stereum occidentale, from Dr. I. M. Johnston, California.** Sessile, dimidiate, conchate. Surface with Vandyke brown pubescence, the growing margin white. Hymenium yellowish cinereous. Basidia narrow, clavate, forming a palisade layer. Cystidia and ducts none. Spores 8 x 5 hyaline, smooth.

Very close to Stereum hirsutum, differing in color of surface hairs and hymenium. To the eye the same as Stereum Phoca of Australia, but not of the same structure.

NOTE 779.—**Hymenogaster Behrii, from Dr. I. M. Johnston, California.** About an inch in diameter, irregularly lobed. Peridium thin, white, but only partially developed, giving the surface a lacunose appearance. Gleba cells large, irregular. Gleba in dried plant is dark brown. Spores 12 x 16, colored, elliptical with equal extremities, with corrugated tubercular surface and short, hyaline apiculus. This seems one of the frequent species in California named by Harkness as Splanchonomyces Behrii. It differs from most species in shape of spores which are similar to that of Hymenogaster Klotzschii of Europe. The latter species differs in small size and ferruginous gleba color.

Mr. Johnston sends the following collection notes: "Accidentally unearthed in a chaparral mainly of Ceanothus near a solitary oak tree (Quercus chrysolepis). The fungus grew in very rocky ground with only a very little humus. It grew but an inch or so below the surface. The altitude was about 4,500 feet and on a steep slope facing the north."

NOTE 780.—**Trametes Krekei, from Rev. Marcus Kreke, Cincinnati, Ohio.** Pileate with narrow pileate development, but very long, decurrent pores. Color pale reddish. Pores large, angular. Spores abundant, globose, 6 x 7 mic.

The receipt of this fine specimen which was unfamiliar to me led to the study of the unnamed Trametes that have accumulated and the publication of Trametes Morganii. It is very similar to Morganii to the eye (but not the same), but the spores are entirely different. Rev. Kreke collected it in Franklin County, Indiana, and it must be rare, for I have no other specimen.

NOTE 781.—**Favolus europaeus, from John E. A. Lewis, Japan.** We have received this scantily before from Mr. Lewis (Cfr. Myc. Notes, p. 659), but at that time we were somewhat in doubt as to the species. These are typically the same plant we have with us, and there is no question as to the determination.

NOTE 782.—**Merulius lacrymans, from Rev. Louis Mille, Ecuador.** This has no pores and technically is a Coniophora, but a section shows the abundant spores of Merulius lacrymans imbedded in the tissue in vertical areas corresponding to the pores if the plant had pores. The alterations that take place in fungi growing in unusual places and away from the light are beyond any one's power to anticipate.

NOTE 783.—**Lycoperdon piriforme, from L. O. Overholts, Pennsylvania.** Large specimens, three inches in diameter, that should be called Lycoperdon herculeum, but have all the characters (except size) of the common Lycoperdon periforme. Massee named this Lycoperdon Bonordenii.

NOTE 784.—**Trametes picta, from Professor T. Petch, Ceylon.** This has been held, and perhaps correctly so, as a synonym for Trametes cingulata. I distinguish it by its glazed surface. I have several collections from the Philippines, and there it seems never to take the fuliginous pileus which is the usual feature of Trametes cingulata. This specimen from Professor Petch does show a dark brown band, and another collection is largely colored on the surface, but more brown than fuliginous.

NOTE 785.—**Polyporus violacee-cinerascens.** We are glad to label this specimen which we have had unnamed for many years. Professor Petch, of Ceylon, recently named and published it. The violaceous color disappears from the dried specimen. We would class it in Section 45c, although its habit of growing in grass in rings would suggest Ovinus. However, it has the texture of Lentus and, like most of this section, probably grew from wood, in this case buried wood.

NOTE 786.—**Trametes straminea, from Professor T. Petch, Ceylon.** This is a most peculiar plant, well named straw color. It is very light weight and loose texture and of a uniform color. The large, angular pores are indistinctly stratose (as they are in the type, but no one could consider it a Fomes. The abundant spores are large, 8 x 10, smooth, and very pale colored. Patouillard named this "Spongipellis straminеus," and Saccardo compiled it as Polyporus. For me it is a Trametes in the same section as hispida, same light texture and same surface. I believe this is the first collection from Ceylon. It came originally from New Caledonia and has recently been recorded in the Philippines.

NOTE 787.—**Polyporus introfuscus, from Professor T. Petch, Ceylon.** Referred by me to secernibilis, but Petch states quite different. The plant reminds one of Polyporus adustus, but has a silky zoned pileus. The spores 3 x 6-8 are of a different type.

NOTE 788.—**Polyporus secernibilis, from Professor T. Petch, Ceylon.** In the sense of Petch, who states the plant has white, translucent pores which turn black in drying, hence quite different from adustus. I do not believe that dried specimens can be told from adustus.

NOTE 789.—**Merulius simillis, from Professor T. Petch, Ceylon.** Specimens from the "type locality" confirm my Note 685. It is close to Merulius lacrymans (which, however, is rarely pileate), but readily distinguished by its small spores.

NOTE 790.—**Lenzites Japonica, from Professor T. Petch, Ceylon.** This is a plant with white context and subdaedaloid gills, smooth but dull surface. The gills remind one of those of Lenzites repanda, but this is a much softer plant, same texture as Lenzites betulina. It could also be classed as Daedalea. This is the second specimen known to me. The original from Japan at Kew is none too good and has the gills badly broken.

NOTE 791.—**Trametes nubila, from Professor T. Petch, Ceylon.** At Paris it is customary to refer the common, African plant Trametes cingulata to Trametes nubila. While no type of the latter exists, I could never reconcile it to the description which calls for a plant with white context and brown surface. At last a plant has been received from Professor Petch which answers the description. Trametes cingulata has ochraceous tissue and usually fuliginous surface. In general appearance and nature the two plants are about the same. Spores globose, 4 mic.

NOTE 792.—**Polyporus fumoso-olivaceus, from Professor T. Petch, Ceylon.** Unicolorous, of a peculiar adustus olive color, close to medal bronze of Ridgeway. Context tough, hard. Pores minute with concolorous tissue and mouths. Spores 3½ x 10 cylindrical, straight, hyaline, smooth.

A species at once striking from the peculiar smoky, olive color. The pileus is but partly developed in this specimen. The context is tough and rather suggests a Trametes. We would add to Section 94.

NOTE 793.—**Fomes lamaoensis, from Prof. T. Petch, Ceylon.** This is proving to be quite a common species throughout the East, but is very rare in the American tropics. It is a curious incident that none of the old fellows named it and as common as it is, it remained for Murrill to stumble over it. Mr. Petch is finding it abundantly now in Ceylon, though it was never collected by Thwaite. He found it first in 1917, although he had been acquainted with its mycelium for more than ten years previously, but never found it in fruit. He suggests that its fructification may be periodical in its appearance or may only occur under certain conditions. An abnormal drouth in 1916 was followed by an exceptionally prolonged rainy period, and in 1917 and 1918 he found Fomes lamaoensis abundantly in localities where he had been collecting for years without finding a specimen.

NOTE 794.—**Fomes calignosus, from Otto A. Reinking, Philippines.** Easily known by its abundance of small, hyaline spores. I am beginning to think it is better classed as a Polyporus instead of a Fomes. These specimens surely. Others, however, with the texture of a Polyporus, have stratified pores of a Fomes.

NOTE 795.—**Lentinus squarrosulus, from Otto A. Reinking, Philippines.** We take this in the sense of Bresadola's determination from the Philippines as we need a name for it, though we decided the original from India to be Sajor Caju. It is similar to the common Lentinus subnudus of the East, but it is smaller and has more narrow gills.

NOTE 796.—**Polyporus discoideus, from Rev. Rick, Brazil.** As we get more material and compare them, the close relationship of the following plants which we had supposed to be quite different, becomes obvious to us. They are all characterized by a lateral stem, soft, white flesh and pores, and large, long, hyaline spores, 5-6 x 12-14. Although none of them have scales, and some do not have black stems, they are all closely related to Polyporus squamosus:

Polyporus discoideus, originally from Cuba, with minute pores, a thin, smooth, glabrous, dark cuticle (Cfr. Fig. 503, Section Ovinus). Polyporus glutinifer (Cfr. Stipitate Polyporoids, page 130) is an Eastern name for it.

Polyporus lentinoides is a name applied by Hennings to the Brazilian plant with thick, white flesh and large pores. It is quite close to Polyporus squamosus of Europe, but does not have scales.

Polyporus udus, originally from Java, and finely illustrated by Junghuhn (Cfr. Note 818), is a form with small pores and smooth pileus with innate spots. Cfr. Fig. 427, Stip. Polyporoids, where it appears as Polyporus fusco-maculatus, a name given to my Samoan collection, although it had been finely figured by Junghuhn years before. I have specimens also from Madagascar and Ceylon.

Polyporus praeguttulatus, recently named from Jamaica, appears to be the same plant and the same markings as Polyporus udus, but Murrill records the spores as much smaller, 2-3 x 5-6. I failed to examine them.

Polyporus aquosus, named by Hennings, and Polyporus lenzitoides by Berkeley, both from Brazil and both surely the same, were probably based on badly dried specimens. I did not find any spores in either that would indicate to the contrary, for spores are abundant in all other "species."

NOTE 797.—**Polyporus meleagris, from Rev. Rick, Brazil.** We refer this to the Eastern species with much doubt. It is a thicker plant, a Polyporus rather than a Polystictus. It has the same character however. When young it is decidedly greyish, but fades out when old. Cfr. p. 16, Letter 65. The spores of this collection are about 2½ x 4.

NOTE 798.—**Fomes perlevis, from Rev. J. Rick, Brazil.** This was named from Madagascar (Cfr. Synopsis Fomes, p. 231). It was also named from Brazil (a resupinate piece) as Poria fulvo-umbrinus, a name with no application to it, and based on an imperfect specimen. Can one be blamed for not referring to a "Poria" a specimen with a pileus 6 x 10 inches? This specimen from Rev. Rick is about 4 inches in diameter.

NOTE 799.—**Polyporus dorsalis, from Rev. J. Rick, Brazil.** An ample collection, including a few mesopodial specimens and demonstrating that Polyporus dorsalis, based on stipe insertion, is not an invariable character. Still I think it is about as good a species as the average, though of course only a tropical form of Polyporus lucidus, but we do not have it in temperate regions.

NOTE 800.—**Geaster pectinatus, from Rev. J. Rick, Brazil.** As illustrative of how Geasters will vary, Rev. Rick sends six collections. All are the same species without exception, named as above from its sulcate mouth. And yet some specimens have almost even mouths. Others have the striations at the base on which Geaster plicatus was based. In nature there is no such thing as a "species" of man's idea.

NOTE 801.—**Polystictus brunneo-leucus, from L. Rodway, Tasmania.** (Cfr. Myc. Notes, p. 664.) The spores of this plant are abundant, 3-4 x 8-10, cylindrical, straight. There is an intimate relation between this plant and Polystictus planus of the United States, also the thin, tropical form of Trametes cervinus.

NOTE 802.—**Poria Archeri, as determined by Mr. Rodway.** Only known, I believe, from Tasmania, and peculiar in its color, which is apricot orange of Ridgway. No Poria of similar color occurs in Europe or America. There are no cystidia and the spores (abundant) are hyaline and allantoid, about 1½ x 4-5.

NOTE 803.—**Polyporus Wilsonianus, from L. Rodway, Tasmania.** Cfr. Myc. Notes, p. 787.) This was named only recently from Australia, but this specimen differs so much from the original that at first the species was not suggested. The pilei of this are small, densely imbricate and confluent at the base, so that the section Merismus is at first suggested and the plant should be cross-indexed in this section (28).

NOTE 804.—**Polyporus pubertatis, from L. Rodway, Tasmania.** First this came to me from Japan, then from Australia, and now from Tasmania. It is infrequent but widely spread. The abundant, small, pale-colored spores are the feature of the plant. We noted them as elliptical, as most of them are, but sometimes they are globose.

NOTE 805.—**Rhizina undulata, from E. B. Sterling.** I have always had the impression that this was a rare species, but Mr. Sterling sends an abundant collection that he made at New York. It is a plant that favors pine woods and a sandy soil. Generally known for nearly a hundred years as Rhizina undulata. I believe the name-jugglers now call it Rhizina inflata.

NOTE 806.—**Polyporus trulliformis, from Dr. G. Zenker, Cameroun.** The original collection of this came from Dr. Zenker (Cfr. Letter 42), but was based on small specimens (about 2 cm.) and does not give much idea of this collection which is nearer two inches. The strongly reticulate spores are the characteristic feature.

NOTE 807.—**Fomes australis, from E. D. Merrill, Philippines.** Pileus applanate, with a hard, rigid, black crust with brown surface. Context dark-brown (bay-brown). Pores very minute, hard, rigid, heavy, with thick walls. Mouths fuliginous. Spores 6 x 10, smooth, truncate.

It is the time-honored custom to refer every Fomes of the section Ganodermus that came from the tropics to Fomes australis. Merrill varied the proceeding by calling the tropical species Fomes tornatus, but the idea was the same. It has always been embarrassing to me to name tropical plants of this section, for I could not see any difference between most collections called Fomes australis and the European Fomes applanatus, excepting one came from the tropics. The series of specimens from the Philippines shows a practical difference in the pores, as previously explained. We feel that the name Fomes australis should be continued, as it has been used so many years, and we propose to apply it to the plants of this character. We do not claim that it is in the sense of Fries, for we do not feel that he had any definite idea in connection with the name excepting that it is a plant from the tropics. His type at Kew does not conform to his description, and is only a synonym for Fomes applanatus.

NOTE 808.—**Camillea Sagraena.** We stated in our Camillea pamphlet that the white, lower compartment of this species had not been noted. This is an error. In Montagne's original figure it is clearly shown in the enlarged section.

NOTE 809.—**Cordyceps tricentri.** Professor A. Yasuda, who named this species, advises me that he made an error in the host, and suggests correcting the name to Cordyceps Aphrophorae, as he finds the host to be Aphrophora intermedia. He asks if that is permissible. I think it is permissible but not advisable, for if a name is once published and established it is very difficult to make the correction, for the original publication is compiled in our text books and the correction rarely catches up with it. Besides, if the correction came into use, a hundred years from now some cheap, date dictionary juggler would look up the details and "restore" the original name. The better way, I think, would be to retain the original name and in publishing regarding it, merely state there was an error in the determination of the host.

NOTE 810.—**Trametes vitrea, from H. W. Ridley, Singapore.** Sessile, rigid, thin, (⅛ cm.), with a smooth, hard, glazed surface. Color of surface isabelline, of context is rose flesh color. Pores minute with tissue the faintest tinge of rose. Spores minute, 2½ x 3½.

A rigid species with same sized surface pores and appearance as Trametes paleacea until one cuts in and notes the context of a different color. It belongs in Section 133 with Trametes roseola, Trametes Feei, etc. I have never seen but this one collection from Mr. Ridley which I received several years ago.

NOTE 811.—**Polyporus Schulzeri.** This is an imperfectly known species of Eastern Europe (Slavonia). Originally it was named by Fries from a picture sent him by Kalchbrenner (still preserved at Upsala) and afterwards published in Kalchbrenner's Icones. This drawing so closely represents our Polyporus obtusus that we have thought it to be the same, but if so, it is the only record of this species in Europe. The only specimen purporting to be this species that we have seen is in Kmet's exsiccatae, but this specimen does not seem to agree with Kalchbrenner's figure. The pores are much smaller and not "irpicoid-hydnoid" as shown and described. In the sense of this specimen it is a different plant. The context and surface are hard and pores are much smaller. The spores (from dried specimens) are abundant, very irregular in size and somewhat angular, but the perfect ones appear to be compressed, globose, about 7-8. The two plants are close, but we believe are different.

NOTE 812.—**Fomes Meliae.** On a recent visit to the "type locality," Auburn, Ala., I found Fomes Meliae on the "type" host. I have gotten it from Dr. R. P. Burke, Montgomery, Ala., and gave (Note 333) the points by which it can be told from Fomes connatus, with which it has been confused. The spores are cylindrical, about 8 x 8, rather than elliptical, 8 x 6, as I recorded them.

NOTE 813.—**Irpex subcoriaceus, from Rev. Rick, Brazil.** (Cfr. Myc. Notes, p. 776.) Rev. Rick writes me regarding this plant that it is frequent with him and grows very large, a foot in diameter, and is perennial, hence can not be an Irpex. There is no genus now established for a perennial Irpex and one must be erected or the boundaries of Irpex extended. I think the latter is better. And better still, perhaps, would be to include the plant in the genus Hydnofomes, though of a much softer texture.

NOTE 814.—**Trametes rufescens.** For a number of years I have had a specimen, received from C. H. Demetrio, Missouri, labeled Polyporus rufescens. It is so different from Polyporus rufescens that I hardly see how the name was suggested. Still I think its relationships are with Polyporus rufescens. This is sessile and grew on a log. The flesh is dual as in rufescens, but the lower is ligneous, very hard, and the upper is a thick, fine, soft pad, a cm. thick. The pores are small, round, entire, while in Polyporus rufescens they are narrow, large, lacerate, daedaloid. The abundant spores are the same. It is a question how to treat these sporadic collections. If we call them by the same name, we have plants together that have no apparent resemblance to each other. It is exactly the same situation as between Polyporus Balloui and Polyporus rufescens.

NOTE 815.—**Trametes Morganii.** Pileus corky, undulate, by far the greater part resupinate. Margin short, tawny. Spores 6 x 12. Color pale reddish. Pores medium, round,